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*The charge of the Louisiana Department of Wildlife and Fisheries is to protect, conserve and replenish the natural resources, wildlife and aquatic life of the state.*

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# FROM THE SECRETARY

The fiscal year completed June 30, 2008 was a period of continued recovery from the devastating storms of the 2005 hurricane season and building toward a more productive Louisiana Department of Wildlife and Fisheries (LDWF) in the years ahead.

The Office of Fisheries utilized federal funds provided in the aftermath of Hurricanes Katrina and Rita to assist in the rehabilitation of shrimp grounds and oyster reef habitat, as well as debris removal from waterways used by commercial and recreational fishermen. Meetings with fishing industry leaders and fishermen who sustained losses due to hurricane impacts set the stage for much needed direct assistance for those eligible for recovery funds.

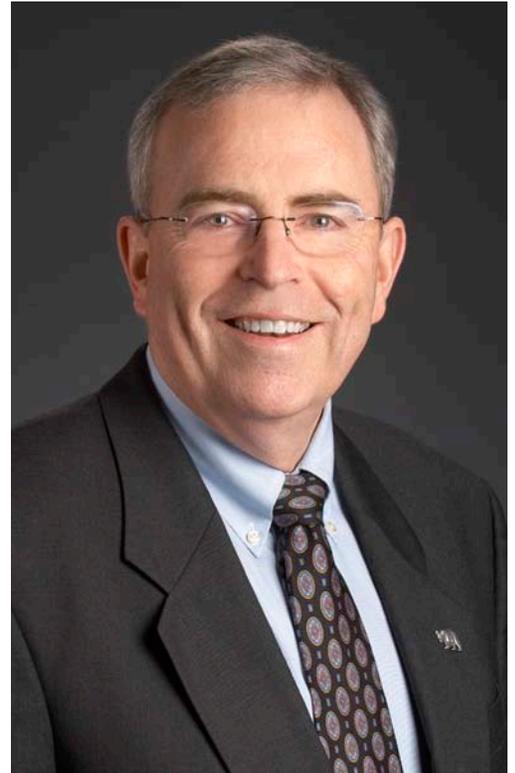
The Marine Fisheries Division also supervised progress in construction of the new marine research lab on Grand Isle, planning ahead for an anticipated completion in the spring/summer of 2009.

The Office of Wildlife broke ground on a new regional office in Minden to better serve constituents in the northwest corner of the state and biologists within the Coastal and Non-Game Resources Division saw years of dedicated work culminate in the de-listing of the brown pelican. Governor Jindal was present in February as the Secretary of the Interior made the announcement in Baton Rouge that the state bird would no longer be on the federal list of endangered species.

The Enforcement Division continued to train agents internally and personnel from an array of state, federal and local agencies on search and rescue techniques and a coordinated response effort. Their enhanced role in the Governor's Office of Homeland Security and Emergency Preparedness framework has become a part of this agency's extended mission.

Additional good news was noted in recreational fishing and hunting license sales as gains were made toward returning to pre-storm sales levels. Our residents most affected by storm impacts, who had to face challenges in their own personal recovery efforts, have begun to return to the outdoor activities they enjoy. And non-resident license sales rebounded as marinas and overnight hunting accommodations returned to business, offering the service and hospitality customers have grown accustomed to over the years.

We are fortunate to have such resilient people in this department and in this state to respond each time tropical storms damage businesses, homes and lives. LDWF will continue to work cooperatively with state and federal resource management agencies, university partners and non-governmental organizations to produce positive results in the fish and wildlife habitat management programs we administer.



Robert Barham, *Secretary*

# COMMONLY USED ABBREVIATIONS

**CWD** - Chronic Wasting Disease

**CWPPRA** - Coastal Wetlands Planning, Protection and Restoration Act

**DMAP** - Deer Management Assistance Program

**FEMA** - Federal Emergency Management Agency

**GSMFC** - Gulf States Marine Fisheries Commission

**LADT** - Louisiana Antlerless Deer Tag

**LARP** - Louisiana Artificial Reef Program

**LDAF** - Louisiana Department of Agriculture and Forestry

**LDEQ** - Department of Environmental Quality

**LDHH** - Department of Health and Hospitals

**LDNR** - Louisiana Department of Natural Resources

**LDWF** - Louisiana Department of Wildlife and Fisheries

**LSU** - Louisiana State University

**LSUCFI** - Louisiana State University Coastal Fisheries Institute

**NAWCA** - North American Wetland Conservation Act

**NMFS** - National Marine Fisheries Service

**NOAA** - National Oceanic and Atmospheric Administration

**OEP** - Office of Emergency Preparedness

**SEAMAP** - Southeast Monitoring and Assessment Program

**UNO** - University of New Orleans

**USACE** - United States Army Corps of Engineers

**USGS** - United State Geological Survey

**USDA** - United States Department of Agriculture

**USFWS** - United States Fish and Wildlife Service

**USCG** - United States Coast Guard

**WMA** - Wildlife Management Area

This public document was printed at a cost of \$901. 100 copies of this document were printed in this first and only printing. This document was printed by the Department of Wildlife and Fisheries, 2000 Quail Drive, Baton Rouge, LA 70808 to provide an account of the department's activities during the fiscal year. This document was printed in accordance with the printing standards for state agencies established pursuant to R.S. 43:31.

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# OFFICE OF SECRETARY

*The Office of Secretary is administered by LDWF's chief administrative officer, who oversees all scientific operations as organized by the Office of Wildlife and the Office of Fisheries. The Secretary also has ultimate authority over the operation of LDWF's fiscal and business matters as administered by the Office of Management and Finance. Support operations of LDWF report directly to the Secretary. These include the Enforcement Division and the Seafood Promotion and Marketing Board, as well as LDWF's Legal Section.*

## **ENFORCEMENT DIVISION**

The Law Enforcement Division is responsible for enforcing laws enacted by the Louisiana Legislature relative to fish and wildlife resources and boating safety regulations, as well as federal regulations pertaining to migratory birds and endangered species.

## **LOUISIANA SEAFOOD PROMOTION & MARKETING BOARD**

The Louisiana Seafood Promotion and Marketing Board was created by the Louisiana Legislature with the purpose of enhancing the public image of commercial fishery products, promoting the consumption of these products and assisting the seafood industry. According to the mission statement, the board assistance is to twofold: product promotion through advertising programs and public image enhancements; and market development by better utilizing existing markets and establishing new market opportunities.

## **LEGAL SECTION**

The Legal Section represents the department and the Wildlife and Fisheries Commission in all legal matters involving promulgation, enforcement and administration of the state's fish and game laws and regulations, litigation involving department programs, daily advise and counsel and drafting of contracts, legal documents and legislation.

# ENFORCEMENT

The Law Enforcement Division is responsible for enforcing laws enacted by the Louisiana Legislature relative to fish and wildlife resources and boating safety regulations, as well as federal regulations pertaining to migratory birds and endangered species.

The Louisiana Department of Wildlife and Fisheries Law Enforcement Division (LDWF/LED) is a fully-commissioned statewide law enforcement agency with the primary mission of protecting Louisiana's natural resources and serving the people who utilize them. Beyond the traditional role of ensuring compliance with licensing and harvesting regulations, LDWF/LED also conducts search and rescue missions, enforces boating safety laws, investigates boating and hunting accidents and provides boater education classes for thousands of citizens each year.

LDWF/LED conducted 314,475 patrol hours in fiscal year 2007-2008: 187,320 on land and 127,155 on water. Agents made 659,046 contacts with the public, the majority of whom were in compliance with state and federal wildlife and fisheries regulations. LDWF/LED agents issued 15,471 criminal citations and 3,946 warnings during this period. The most common types of citations were fishing without a license, failure to comply with personal flotation device regulations or failure to comply with rules and regulations on WMAs.

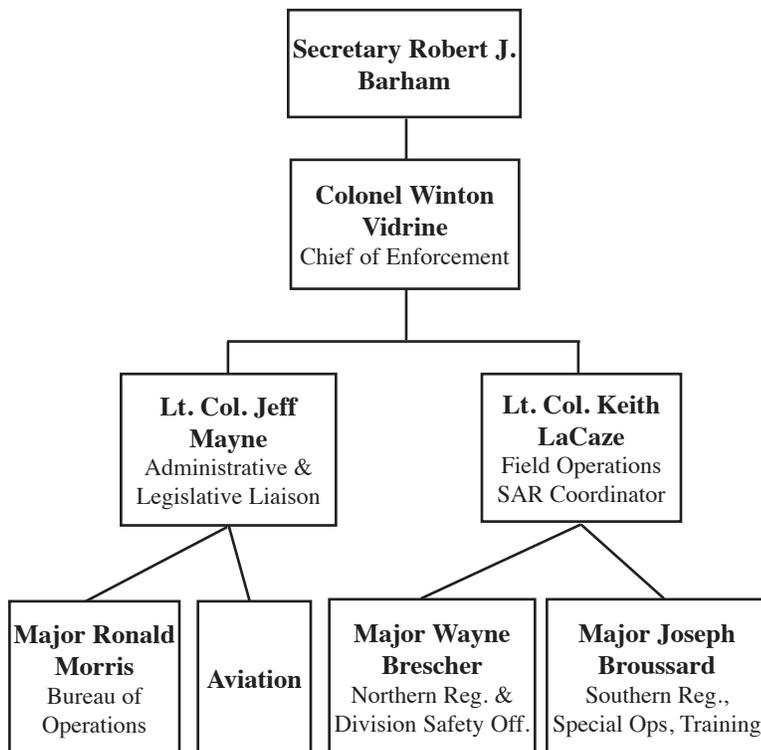
## ORGANIZATIONAL STRUCTURE AND PERSONNEL

LDWF/LED is organized in a paramilitary structure to assure the efficient use of resources, consistent statewide enforcement policy and an effective, coordinated response to urgent needs (*FIGURE 1*). LDWF/LED is commanded by one colonel, the chief of enforcement, who reports directly to LDWF's Secretary. Reporting to the colonel are two lieutenant colonels: one supervising search and rescue and field operations and one overseeing administration of the division and the operations of the Aviation Section and serving as LDWF's legislative liaison. There are three majors, one over the northern section of the state, one over the coastal section and another over the Bureau of Operations which includes boater safety education programs.

Louisiana is divided into nine enforcement regions (*FIGURE 2*), each composed of two or three multi-parish districts. Each region is managed by a captain, who supervises two or three district supervisors of the lieutenant rank. Regions have between 16-25 agents, depending on regional size, resident population and participant population.

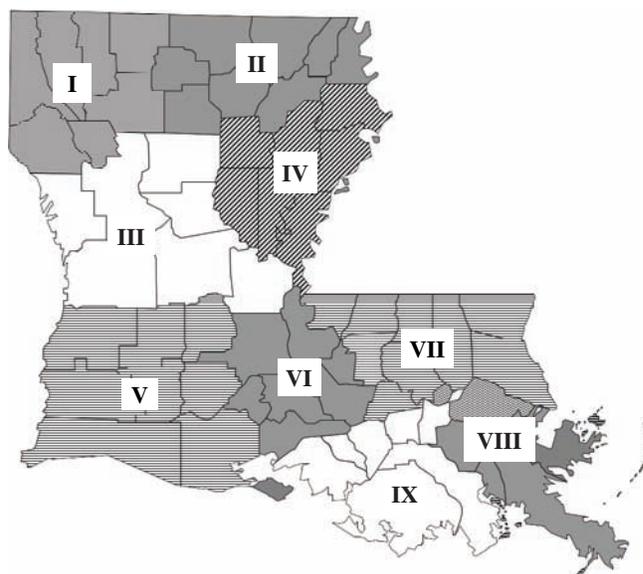
Total division head count is 261 positions, with an average of 10-20 vacancies at any given time due to retirement, resignation, etc. The actual number of filled posi-

## LDWF LAW ENFORCEMENT DIVISION ORGANIZATION CHART



*FIGURE 1.*

## ENFORCEMENT DIVISION REGIONS



*FIGURE 2.* Approximate Map of Louisiana Department of Wildlife and Fisheries Law Enforcement Division Regions.

tions (as of February, 2009) is 256, including 233 enforcement agents, 23 administrative staff including six communications officers and two pilots.

Current funding provides a field enforcement staff of two to four agents per parish, according to the nature of wildlife-based activities in the area, the number of people participating, the frequency of their participation and other factors.

The total number of field agents, largely due to funding reductions, has declined in recent years and is expected to decline to 235 in fiscal year 2008-2009 (**FIGURE 3**). Though LDWF/LED has managed to maintain a high level of performance despite the reduction in the number of law enforcement agent positions, there are concerns that further reductions may compromise the ability to accomplish the division's goals of resource conservation, law enforcement and public safety.

## REGIONAL ENFORCEMENT PROGRAMS

Most of the law enforcement activity performed by LDWF/LED is conducted by regional agents. Regional agents work a schedule assigned by their supervisors to address seasonal needs, reported violations, weather conditions and predominant activities. Agents are on-call 24 hours per day and must be willing to change their work hours and locations as circumstances require. Schedules are often changed due to weather and reported violations, and agents are often called out to respond to violations in progress, boating and hunting accidents and calls for search and rescue.

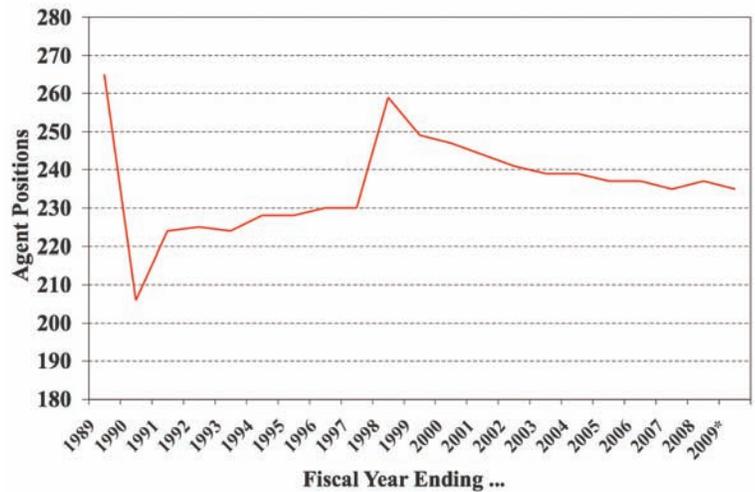
Agents use a variety of vehicles during land patrols, primarily four-wheel drive trucks and all-terrain vehicles (ATVs or 4-wheelers). The primary patrol vessels used during water patrols are outboard bay boats and 19-32-foot marine patrol vessels. LDWF/LED also deploys go-devils, airboats, surface river mudboats, bass boats and flatboats.

## SPECIALIZED UNITS

LDWF/LED contains five specialized units with selected missions or purposes: the Special Operations Section; the Special Investigations Unit; the Oyster Strike Force; the Statewide Strike Force; and the Aviation Section. Agents in specialized units have developed specific skills, expertise and knowledge appropriate for their particular operational fields. Agents in specialized units operate in relatively broad geographic areas and may work alongside regional enforcement agents when appropriate.

The Special Operations Section houses covert operations, in which undercover agents work to stem the illegal sale of fish and wildlife, develop information about ongoing criminal enterprises and address major violations of state and federal law.

The Special Investigations Unit devotes attention to commercial fisheries operations and license fraud. Violations



**FIGURE 3.** Louisiana Department of Wildlife and Fisheries Law Enforcement Division Enforcement Agents Positions: FY 1988-89 to FY 2008-09

include smuggling, interstate commerce violations, false reporting and under-reporting of commercial fish harvests.

The Oyster Strike Force works with region agents in coastal regions to address violations in the oyster industry, primarily harvesting from closed waters, stealing from oyster leases and state grounds and oyster size regulations.

The Statewide Strike Force is assigned to work problem areas statewide. These agents provide regions with additional manpower on WMAs and places of high seasonal utilization, such as Grand Isle and other locations throughout the state.

The Aviation Section contains two pilots and three airplanes. The Aviation Section's aircraft provide a valuable platform for detecting illegal hunting and fishing activities and frequently play a vital life-saving role in search and rescue operations. The Aviation Section also contributes its services to other divisions for biological missions, such as waterfowl counts and the monitoring of commercial fisheries.

## BOATING SAFETY PROGRAM

With 15,000 miles of tidal coastline, 5,000 miles of navigable waterways, three of the busiest ports in the country, a thriving shipping industry, a large commercial fishing fleet and over 300,000 registered boats, Louisiana contains many geographic, demographic and economic features that pose special challenges for boating safety enforcement. LDWF/LED agents made 261,708 public contacts during the course of 100,315 patrol hours dedicated to boating enforcement, education and accident investigation in fiscal year 2007-2008. More than 79,623 patrol hours were performed in vessels on the water.

The adoption of "Rules of the Road" regulations for boaters has enhanced the enforcement of boating safety regulations and boating under the influence (BUI) laws. These

regulations provide the boating public with clear rules for the manner in which boats are operated and are an important tool in determining fault in boating accidents. The "Rules of the Road" also enhance the ability of agents to address reckless and careless operation of motorboats. In fiscal year 2007-2008, LDWF/LED agents issued 182 citations for careless and reckless operation of a vessel and 134 citations for operating a vessel while intoxicated.

The statewide LDWF/LED boater education course teaches safe, legal and responsible boat operation and is approved by the National Association of State Boating Law Administrators. This program provides a vital outreach to the community that has greatly improved the awareness of and compliance with boating safety practices and regulations in Louisiana. Agents hold classes in each region in every month for anyone who wishes or is required by Louisiana law to take them. In fiscal year 2007-2008, 5,632 citizens attended 239 classes. LDWF/LED is in the process of recruiting and training additional volunteer instructors to complement and enhance the efforts of its own agents.

Agents provided 3,858 patrol hours of search and rescue services, both on land and water, in fiscal year 2007-2008. These operations have saved lives, reduced the suffering of accident victims, stranded hunters, boaters and anyone else needing assistance, and minimized the anxiety for family members eager to learn the fate of their loved ones. Agents regularly train to hone their search and rescue skills and constantly work to develop close working relationships with other agencies to coordinate response efforts.

### **AGENT TRAINING PROGRAM**

The Wildlife and Fisheries Law Enforcement Academy graduated 22 agents in fiscal year 2007-2008. The academy trains and certifies cadets in a wide variety of areas, including the Peace Officers Standards and Training (POST) Council certification required of all law enforcement officers. Cadets live at the academy during the week and experience a boot camp-style program, with daily physical training in addition to classroom activities. There are many hands-on courses, such as waterfowl enforcement practices, boat operation and firearms training. Each cadet is equipped with a laptop computer with the capability for networking through the Internet for access to web-based courses and research sites.

Cadets receive training in numerous courses of study and are certified in 10 courses of training conducted by FBI-certified trainers from LDWF/LED and expert trainers from a number of other agencies. LDWF/LED personnel conduct training in standardized field sobriety testing, basic marine theft, basic defensive tactics, collapsible baton techniques, wildlife agents' aquatic survival and chemical weapon indoctrination. The Louisiana State Police (LSP) provides training in chemical testing for insobriety. The LSP Highway Safety Division leads classes in DWI detection and the Department of Public Safety conducts a Louisiana Safe Driver's Course.

### **JOINT ENFORCEMENT AGREEMENT**

LDWF/LED again entered into a Joint Enforcement Agreement (JEA) with NOAA's Office for Enforcement. LDWF/LED received approximately \$1,465,000 in fiscal year 2007-2008 to patrol for compliance with federal commercial and recreational fisheries regulations, primarily in the Gulf of Mexico. Several patrol vessels and other necessary equipment has been acquired under this program. Agents have been very successful, identifying illegal and unregulated fishing activity and obtaining a number of large cases involving commercial and recreational violations.

### **OPERATION GAME THIEF**

Louisiana Operation Game Thief, Inc. (OGT) is a program which provides cash rewards to those providing information leading to the apprehension of wildlife violators. Violations can be reported anonymously by accessing LDWF's web-site ([www.wlf.louisiana.gov](http://www.wlf.louisiana.gov)) or by calling a 24-hour toll-free telephone number (1-800-442-2511) maintained in the LDWF Communications Center. Reports are immediately referred to agents for action. The callers may remain anonymous.

Rewards totaling \$9,200 were paid on 51 cases. The total amount of rewards paid by OGT since its inception 24 years ago is \$253,800.

### **HOMELAND SECURITY**

LDWF/LED is an active participant in Louisiana's Homeland Security Plan and represents the state in waterborne emergencies. Through OEP, LDWF/LED is the lead agency for search and rescue operations during natural disasters and maritime security of Louisiana's vital business and government interests along the coast and major rivers. As members of the Governor's Homeland Security Advisory Council, the Area Maritime Security Executive Steering Committee and all major port security committees within the state, LDWF/LED enforcement agents frequently respond to requests to deploy LDWF marine resources for security concerns. LDWF/LED specialized training and equipment and its ability to operate throughout the state's vast maze of waterways and wild areas has complemented Louisiana's ability to respond to emergencies on land and water.

### **MARITIME SEARCH AND RESCUE COURSE**

Since the devastating landfalls of hurricanes Katrina and Rita, several law enforcement agencies across Louisiana have recognized the vital need to train officers in all aspects of search and rescue (SAR), especially maritime search and rescue. LDWF/LED, as the primary agency for SAR in the state, received several requests from law enforcement agencies to share the benefit of its wide experience in the area by providing maritime SAR training to their officers.

In 2007, the Louisiana Police Officers Standards and Training (POST) Council granted LDWF/LED approval to offer the Maritime Search and Rescue Course (MSARC) to qualified POST certified peace officers.

The 40-hour MSARC was designed and implemented to train other law enforcement officers in such areas as marine SAR, Louisiana Emergency Operation Plans (ESF-9 SAR), navigation rules, vessel handling, waterborne arrest techniques and more. During fiscal year 2007-2008, 30 law enforcement officers from state and local law enforcement agencies in Louisiana were certified in three MSARC courses offered by LDWF/LED.

# LOUISIANA SEAFOOD PROMOTION & MARKETING BOARD

In fiscal year 2007-2008, The Louisiana Seafood Promotion and Marketing Board's (LSPMB) main objectives were to continue to bring attention to the recovering Louisiana fishing communities and encourage support for Louisiana seafood products and fishermen. Thanks to its many partnerships, LSPMB presented and sponsored several events this year that helped to meet those objectives.

2007 began with the fourth annual Great American Seafood Cook-Off held at the Louisiana Restaurant Association's FoodService EXPO at the New Orleans Convention Center. This event, sponsored largely by NOAA, brings in talented chefs from all around the United States to compete in a cook-off that features only domestic, sustainable seafood. This event received both local and national media attention.

In the spring, LSPMB presented several events and marketing opportunities. First there was Oyster's Jubilee, where the world's largest oyster po'boy was built down Bourbon Street in the New Orleans French Quarter. In the spring was the ACME World Oyster Eating Challenge, where competitive eaters came from all over the world to see who could eat the most oysters in 10 minutes. This event received both local and national coverage.

In May, LSPMB celebrated the opening of the Louisiana shrimp season or "Bonne Crevette" by teaming up with Chef Paul Prudhomme to deliver the first shrimp of the season to some of New Orleans most talented chefs. Also

in May, the board presented the first ever Louisiana Seafood Cook-Off, which is the predecessor for the Great American Seafood Cook-Off. This event was held at the New Orleans Wine and Food Experience and featured 13 chefs from across the state battling it out to see who would represent Louisiana in the fifth annual Great American Seafood Cook-Off. The board also arranged a trip for food and travel journalists from around the world to ride on a shrimp boat, meet a shrimper and learn first-hand about the struggles, pride and triumph of the Louisiana shrimping community.

In June, LSPMB joined with partners to host the second annual Louisiana Seafood Festival in New Orleans. With partners such as Fed-Ex and Barnes and Noble, this weekend long festival showcased the best of Louisiana seafood through food vendors, fresh product for sale, cooking demonstrations and local cookbook sales. The festival was visited by more than 50,000 guests and received both local and national media coverage.

In addition to these events, the board also exhibited at the Boston Seafood Show and attended the National Restaurant Association's Public Affairs Conference.

LSPMB continues to maintain a highly trafficked Web site with the Louisiana seafood recipe and supplier database and continues to publish its monthly e-newsletter, *Cyberfish*, with the latest in Louisiana seafood news. Media impressions for fiscal year 2007-2008 totaled more than 200 million with a publicity value of more than \$750,000.



# OFFICE OF MANAGEMENT & FINANCE

*The Office of Management and Finance is directed by the Undersecretary. This budget unit is responsible for the functions of accounting, budget forecasting and control, procurement and contract management, administrative services, information technology services, management and program analysis (including strategic and operational planning), socioeconomic research and analysis, property control (including fleet management), boat registration, human resources management, federal grant reporting, administration and issuing of licenses and permits, collection of fees, taxes, fines and penalties, public information and the Louisiana Conservationist magazine.*

## **COMPUTER CENTER**

The Computer Center oversees LDWF's information processing resources.

## **FISCAL**

The Fiscal Section is responsible for all financial operations of LDWF.

## **HUMAN RESOURCES**

The Human Resources section handles all employee personnel actions and employee benefits, develops policies and procedures, conducts training and new employee orientation, administers the performance planning and review program and LDWF's safety program.

## **LICENSING**

The Licensing Section administers the issuance of all licenses and most other permits and is responsible for the collection and deposit of related fees.

## **PUBLIC INFORMATION**

The Public Information Section is responsible for the production of printed materials and audio-visual products, media relations and special events and promotions.

## **PROPERTY CONTROL**

The Property Control Section is responsible for LDWF's movable property program, fleet management program and managing property, marine, general liability and vehicle insurance claims.

## **SOCIOECONOMIC RESEARCH & DEVELOPMENT**

The Socioeconomic Research & Development Section conducts economic research pertaining to wildlife and fishery resources, provides support to other LDWF programs, and represents LDWF on various study groups, task forces and committees.

# COMPUTER CENTER

The Computer Center is responsible for maintaining LDWF's information processing resources. The center operates three mainframes and 26 Intel based Windows servers. The Computer Center supports 648 desktop computers and 284 laptops in 30 locations throughout the state and supports and maintains the network infrastructure that ties them all together. We offer training, help desk support, custom programming, database services, email services, Internet access, user data backup for headquarter users, statistical analysis tools for biologists and imaging services for Human Resources, Licensing and Fisheries.

In addition, the Computer Center has developed the mainframe applications necessary to sell and maintain commercial licenses, motorboat registrations, hunting/boating safety, Alligator System and Lottery System. On the Intel platform, we developed and maintain the Enforcement application that allows us to track citations as well as the magazine system that tracks the Conservationist magazine subscription information.

The Computer Center, along with our Public Information section, maintains LDWF's public Web server which contains information on hunting rules and regulations, season dates, licensing information, emergency closures and much more.

## TECHNICAL SUPPORT SECTION

The Technical Section, which consists of four employees and one student, supports 648 desktop computers and 284 laptops throughout the state. In the last nine years, the number of personal computers that LDWF utilizes has grown from under 25 to over 600. Keeping these machines maintained and secure is one of the Technical Section's biggest challenges. Each of these machines must have regular updates applied and have certain software installed and updated (anti-virus, spyware).

Providing general help desk support for these computers occupies a large portion of a tech's time. For fiscal year 2007-2008, the technical section fielded 5,051 non-trivial telephone support calls, configured, built or relocated 255 computers/printers and answered 9,109 emails on hardware and software support issues. Technical calls can be as simple as helping with an expired password, to helping with software problems/re-installations, or as complicated as helping repair and diagnose failed hardware. The technical staff must travel regularly to all of LDWF's remote facilities to perform this maintenance on all machines.

The Technical Section maintains three mainframes and 26 Windows based servers. Each of the mainframes/servers must be given daily maintenance. This includes not only keeping the operating systems and utility software

up to date, but also providing regular backups for all critical data to prevent loss. Loss of data can come from simply losing a disk drive, losing entire computers or being hacked. Catastrophic loss of data can come from fire, flood, terrorism or other causes that would impact the entire organization. In addition, data can be lost through human error such as inadvertently deleting records that shouldn't be deleted. All these risks must be mitigated. Primarily this is done through daily backups of all pertinent data. Every day all critical data on our servers is backed up and stored off-site. We also attempt to back up the majority of our user's important data that is stored on their hard drives.

Maintenance also includes keeping all the critical software that runs on the servers up to date and functional. The services we provide include things such as E-mail, databases, anti-virus protection, web-services and network operating system services/security. All these software packages are regularly updated. Training to keep up with these updates could easily become a constant activity.

Accomplishments during fiscal year 2007-2008 include:

- Installed a Storage Area Network disk array for more reliable server storage.
- Trained all technical staff on VMWare virtual server software/architecture.
- Upgraded the new SAN to include more disk space, and SAN attached backup tape library.
- Replaced one OpenVMS mainframe server to insure continued maintenance and support.

Finally, the Technical Section is responsible for maintaining the underlying network infrastructure that allows all the computers to communicate with one another. This involves monitoring the network for problems and diagnosing and repairing network routers, switches, hubs, VPN concentrators and telephone data circuits (local and for all remote facilities). Included with this is guarding the network from internal and external threats (hackers/viruses), and maintaining Internet connectivity for all internal users.

## APPLICATION DEVELOPMENT SECTION

The Application Development Team consists of six employees and is responsible for maintaining all custom written applications and new application development. Our applications run on a combination of mainframe and windows server environments. Current applications that the staff has developed and supports include:

- Web based Enforcement system for issuing and tracking violations.
- Enforcement complaint system.
- Enforcement time sheet system.

- Enforcement revocations system.
- Enforcement seafood inspection system.
- Motorboat application, for issuing motorboat permits.
- Commercial License application, for issuing commercial fishing licenses for LDWF.
- Magazine system for tracking the in-house Conservationist magazine.
- Training application for keeping track of mandatory and supervisory training.
- Zip code lookup application.
- Alligator system for tracking all alligators processed commercially in LA.
- DPS system for looking up DMV records for residency validation.
- Lottery application to chose participants in the randomly drawn hunts.
- Hunter and Boating Education system for keeping track of participants in the mandatory hunter education program. It provides the public with the ability to request a duplicate hunting safety or boating safety card online and receive online fulfillment.
- Revocation system for keeping track of individuals that may not purchase licenses.
- Sports License (lifetime license printing).
- Web-based displaced boat lookup (to help public locate lost boats).
- Web-based DMAP, system for keeping track of deer management applications.
- Web-based Oyster Tag sales system.
- Trip Ticket employee performance system.
- Legal application for tracking legal rulings and information.
- Track commercial fishing shipments from/to the state for the Enforcement Division.
- Employee Portal. This application used by employees to launch other LDWF developed web-based applications.
- JEA Patrol System to keep track of enforcement officer's contact information with vessel operators and dealers.

## IMAGING SECTION

The Imaging Section consists of three employees and is tasked with scanning and indexing LDWF documents which include:

- Federally mandated Trip Ticket data (from commercial dealers, used in tracking commercial harvest information).
- Boating safety applications (new and backlog).
- Hunter safety applications (new and backlog).
- Bow hunter student applications (new and backlog).
- Enforcement complaint forms.
- Enforcement time sheets.
- Enforcement seafood inspection forms.
- Motorboat revenue checks.
- Other revenue checks.
- Shrimp Excise Tax forms. This helps our accounting division keep track of excise tax monies.
- Monthly submission forms
- Crab Shedder forms
- Dealer surveys

- Licensing backlog.

The Imaging Section takes requests from Louisiana seafood dealers in person, on the phone, by mail and by fax. These orders can be very time consuming as they often need to explain the variety of forms and their usage. The 2004-2005 hurricane season damaged/destroyed many seafood dealer locations. The imaging section continues to work with dealers destroyed by Hurricanes Katrina and Rita. The section is constantly preparing the much needed information to supply over 2,000 maintenance packets and over 1,000 new dealer packets each month.

The Imaging Section not only scans a vast number of documents for the agency, but verifies and corrects the data as well. This is very tedious work due to the wide ranges of handwriting and poor conditions of the forms when they arrive. In addition to scanning duties, the Imaging Section runs nightly reports for the LDWF's applications systems and helps compile and print reports for the Public Information, Enforcement, Commercial License, Hunter Safety, Motorboat and Recreational License sections.

The system that the Imaging Section staff maintains is used by the Motorboat section to image and archive all motorboat applications/renewals. Human Resources also images every employee document into the system. The imaging system cuts back drastically on the amount of paper documents that must be maintained, makes it possible for instantaneous search/retrieval of these documents and allows multiple HR analysts to access the same records concurrently and securely.

# FISCAL

The Fiscal Section is staffed by 17 employees and is responsible for all financial operations of LDWF. The main goal of the Fiscal Section is to achieve compliance with all applicable laws, rules, policies and regulations governing the functions managed. This section develops and implements fiscal controls, provides advice, assistance and training and standardizes procedures. In addition, the Services Unit provides mail, receiving and duplicating services for the headquarters offices.

The functions include:

- budget and expenditure control and monitoring
- federal grant tracking and reporting
- preparation of all required financial reports
- reviewing and processing professional and consulting contracts
- payment of all vendors
- receipt and classification of various sources revenue
- fund management
- assessment of civil fines
- telecommunications services
- processing of employee travel reimbursements
- liability insurance reporting
- procurement
- administration of the state's purchasing card
- mail/receiving/duplicating
- strategic and operational planning

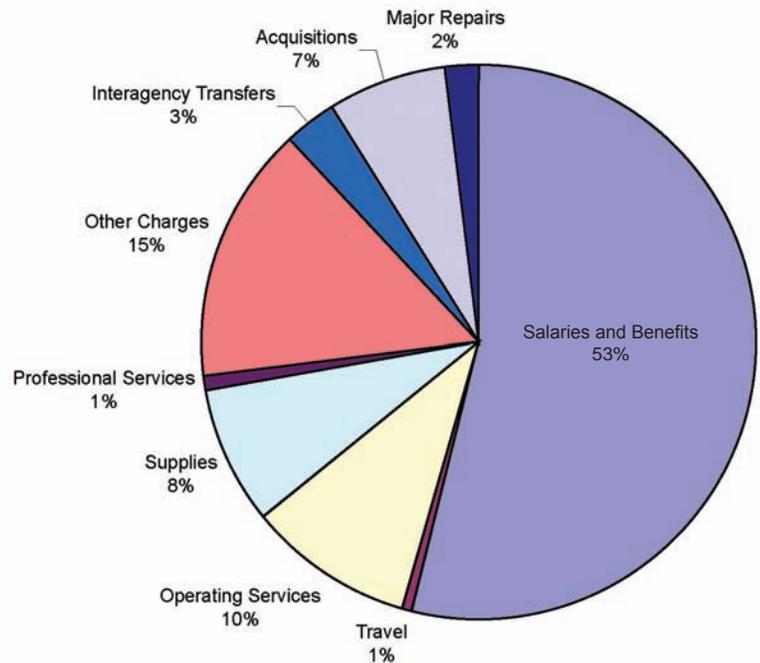
During fiscal year 2007-2008, the Fiscal Section staff:

- reviewed 289 new contracts with a total amount payable of \$13.6 million.
- processed 287 payments on contracts for \$2.8 million.
- responded to 137 requests for telecommunications services and repairs.
- processed 9,673 vendor payments.
- audited and processed 4,589 purchasing card statements.
- warranted funds and prepared periodic reports more than 100 federal grants.
- deposited \$47.8 million in receipts from various sources.
- handled 52 leases of equipment and buildings.
- maintained 672 state purchasing card accounts.
- processed over 320,000 pieces of mail.

## Fiscal Year 2007-2008 LDWF Expenditures by Category (type)

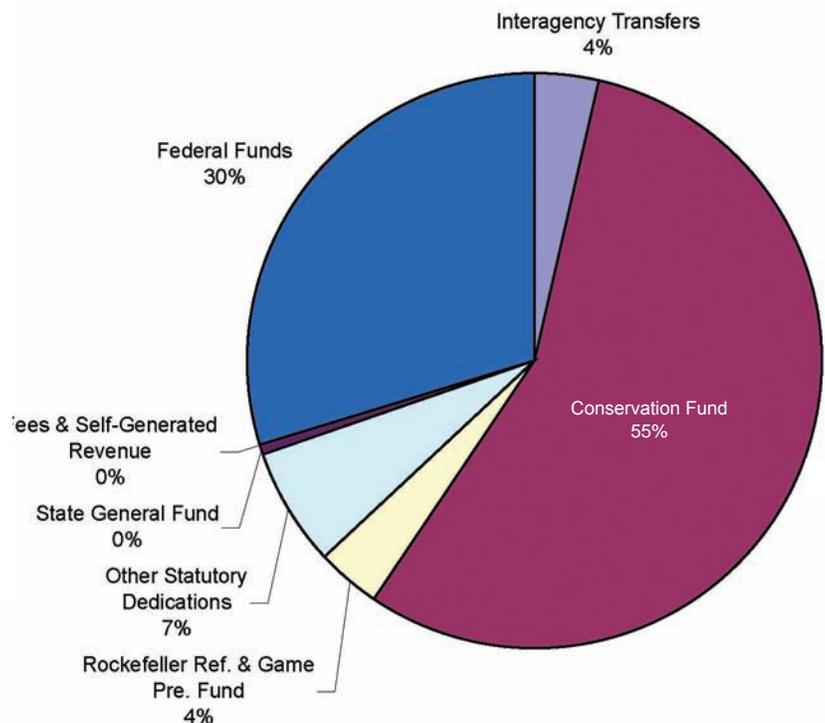
*Total Expenditures = \$102,981,965*

*Total Positions = 801*



## How Fiscal Year 2006-2007 Expenditures Were Funded (Means of Financing)

*Total Means of Financing = \$102,981,965*



## EXPENDITURES BY CATEGORY

Salaries and Benefits	55,583,923
Travel	531,191
Operating Services	10,067,161
Supplies	8,133,472
Professional Services	994,075
Other Charges	15,310,860
Interagency Transfers	3,282,943
Acquisitions	7,170,211
Major Repairs	1,908,129
<b>TOTAL</b>	<b>\$102,981,965</b>

## HOW EXPENDITURES WERE FUNDED

Interagency Transfers	3,742,663
Conservation Fund	57,448,331
Rockefeller Refuge & Game Preservation Fund	3,830,674
Other Statutory Dedications	6,878,083
State General Fund	352,500
Fees & Self-generated Revenue	51,154
Federal Funds	30,678,560
<b>TOTAL</b>	<b>\$102,981,965</b>

## SOURCES OF REVENUE TO THE CONSERVATION FUND

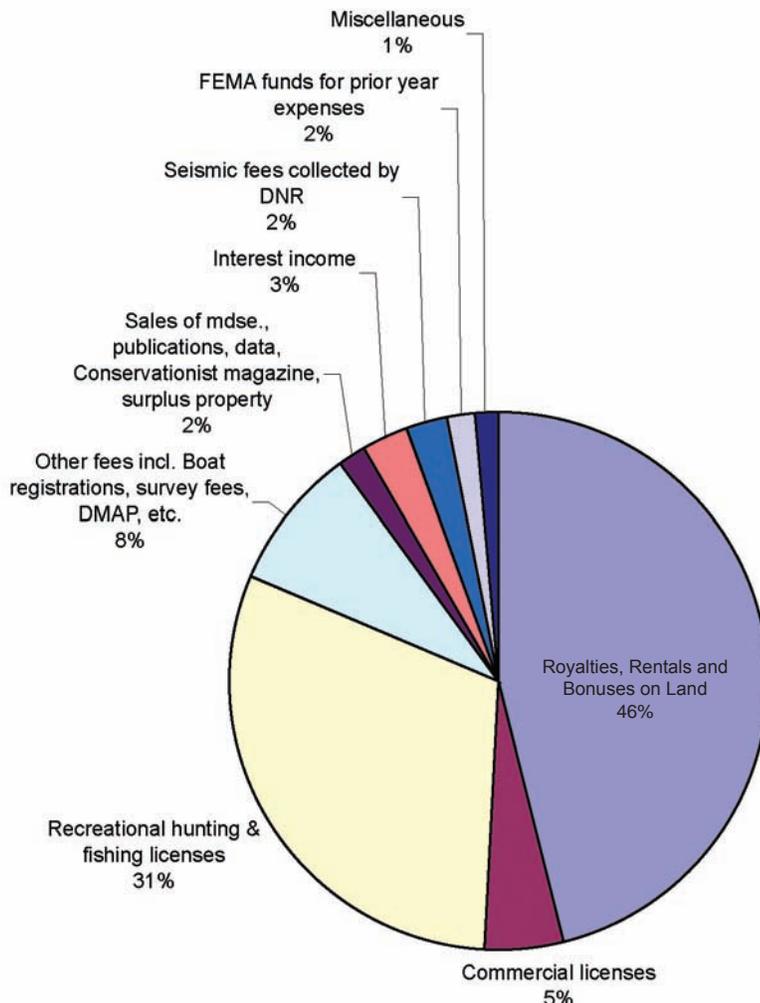
Royalties, rentals and bonuses on Land	25,575,809
Commercial licenses	2,667,253
Recreational hunting & fishing licenses	16,996,729
Other fees including boat registrations, survey fees, DMAP, etc.	4,718,656
Sales of merchandise, publications, data, <i>Conservationist</i> magazine, surplus property	1,030,090
Interest income	1,579,192
Seismic fees collected by DNR	1,290,933
FEMA funds for prior year expenses	961,012
Miscellaneous	759,347
<b>TOTAL</b>	<b>\$55,589,021</b>

## EXPENDITURES BY PROGRAM

Management and Finance and Administrative	10,619,163
Enforcement	26,286,411
Seafood Promotion & Marketing Board	648,812
Wildlife	28,825,144
Fisheries	36,602,435
<b>TOTAL</b>	<b>\$102,981,965</b>

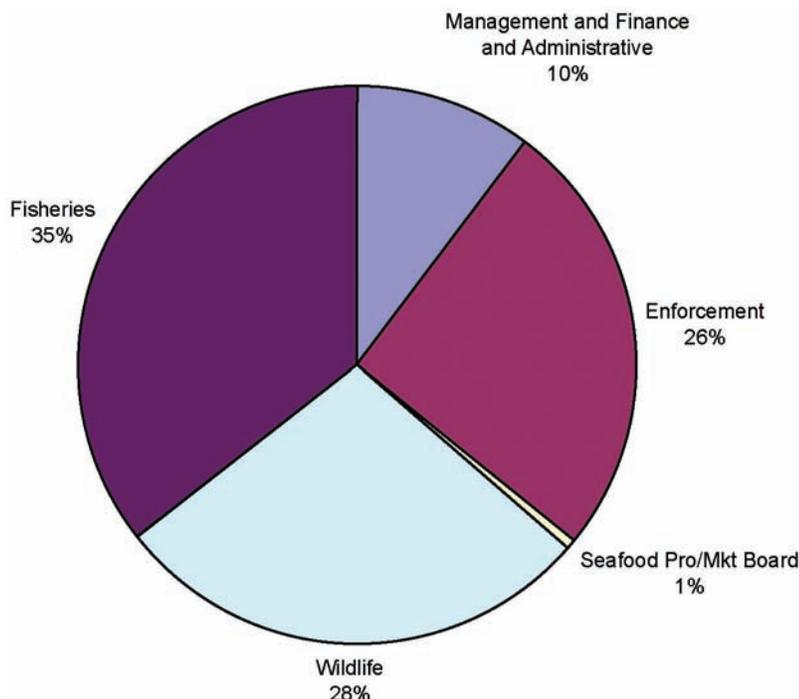
## Fiscal Year 2007-2008 Sources of Revenue to the Conservation Fund

*Total Revenue = \$55,579,021*



## Fiscal Year 2007-2008 LDWF Expenditures by Appropriated Program

*Total Expenditures = \$102,981,965*



# HUMAN RESOURCES

At Wildlife and Fisheries, our most valuable resource is our human resources, the people who direct all of our other resources and get the work done on behalf of the Louisiana taxpayers, users and consumers of Louisiana's natural resources and products.

The authorized number of employees for LDWF for fiscal year 2007-2008 was 800. LDWF also employed students throughout the state.

Along with our active employees, we also provide service and guidance to retirees, former employees and their dependents.

One of the responsibilities of Human Resources is the comprehensive administration of our employees' personnel actions.

Human Resources is responsible for several program areas:

- Human Resource Administration (policies and procedures, civil service rules)
- EEO Compliance (ADA)
- Performance Appraisal
- Training and Staff Development (CPTP, MST, agency sponsored training)

- Employee Relations (employee counseling, Employee Assistance Program, grievances)
- Drug Testing
- Employee Recognition Program
- Classification (Position Descriptions, Job Studies, Audits)
- Wage and Salary Administration
- Recruitment Program
- Selection and Placement
- Benefits Program (health, life and miscellaneous insurance, retirement, workers' compensation, leave management, unemployment and FMLA)
- Operations (employee files, personnel actions, enrollment and exiting of employees)
- Payroll Administration (ISIS system)
- Safety
- Workforce Development
- Affirmative Action

In an effort to enhance safety and productivity in the LDWF workforce, we continue to work with employees and management to develop safe and productive work conditions through several of our programs such as Safety, Planning and Performance Review and Training and Staff Development.

# LICENSING

The Licensing Section serves as the information hub for more than 1 million customers who recreationally fish, hunt, commercially fish and use state lands for non-consumptive purposes. The staff provides customers with state, federal and commission laws, rules and regulations that govern fishing, hunting and registration of boats in Louisiana. The Licensing Section handles the issuance of all commercial licenses and boat registration services, manages the statewide electronic licensing system providing recreational license availability at more than 700 locations statewide, and oversees recreational license and boat registration renewals via internet and telephone. We accommodate commercial license sales at the Bourg location for scheduled days during the months of December and April. The Licensing Section continues to evaluate processes and streamline to improve availability and reduce processing time for licenses and boat registrations.

License/registration activities and related revenue collections are as follows:

- issues in excess of 1.69 million recreational hunting, fishing, trapping and non-consumptive use of state lands licenses sold to 800,000+ customers, generating in excess of \$19.9 million in revenue, and maintain license records for 50,000+ lifetime licensees.
- 63,396 commercial licenses sold, representing approximately 15,000 customers, generating \$3.1 million in revenue.
- 184,378 boat registration applications, generating \$4.2 million in revenue, maintaining data for boats in excess of one million records - 316,593 of which are actively registered.
- Make available various types of oyster tags as required by Federal and State law, in excess of 2 million, to oyster fishermen and processors.

Licensing staff represents LDWF at the Annual Conservation Business Managers Association Conference, and Southeastern Fish and Wildlife Agencies Conference.

# PUBLIC INFORMATION

The Public Information Office (PIO) handles the primary communication programs for LDWF. These programs cover a variety of communication avenues including publications (regulations, books, pamphlets, newsletters, etc), *Louisiana Conservationist* magazine, news and media relations, audio-video productions, Web site, public resource library, public relations and special events. The office employs 12 full time staff members. PIO also serves as support staff to the Louisiana Wildlife and Fisheries Foundation.

## PUBLICATIONS

The publications unit is responsible for the creation and creativity of specialized publications, hunting and fishing regulations and annual report. All pre-press functions, editing and printing approvals are handled through the PIO.

Specialized publications include any publication that is not produced on a regular basis and used for educational, informational or promotional use for LDWF conservation management programs. During fiscal year 2007-2008 the publications unit designed and published the following specialized publications:

- *Louisiana Forest Stewardship Newsletter* (Fall/Winter 2007 & Spring/Summer 2008)
- *Louisiana Bobcat, Fox and Coyote Hunter Survey*
- *Restoration, Management and Monitoring of Forest Resources in the Mississippi Alluvial Valley: Recommendations for Enhancing Wildlife Habitat* (book)
- *Your New Career: the Great Outdoors* (third edition)
- *Go Fish* booklet

Annual publications included the annual report, recreational and commercial fishing regulations, hunting seasons and WMA regulations, migratory game bird hunting regulations, turkey hunting regulations and trapping regulations.

### Louisiana Conservationist Magazine

The *Louisiana Conservationist magazine (LCM)* is the most widely known of the office's programs. It is LDWF's most prominent publication and the state's oldest outdoor magazine. *LCM* was first published in 1923 as a small black and white newsletter. Through the generations it has grown to a 36-page, full-color magazine and remained in continuous publication since its beginning. Circulation at the end of fiscal year 2007-2008 was 15,673.

## NEWS AND MEDIA RELATIONS

In fiscal year 2007-2008, the LDWF news service provided 342 news releases and features to approximately

150 media outlets through an electronic weekly mailing. In the previous fiscal year LDWF's biweekly newsletter moved exclusively to the Web site. At year-end of fiscal year 2007, 3,776 were signed on to receive the electronic publication. At the end of fiscal year 2008 the circulation was 4,428.

Statewide public meetings continued as in past years. These meetings are held in seven locations statewide to inform the public of the proposed hunting season dates and WMA regulations. Public Information staff assisted the Wildlife Division with the coordination and coverage of the meetings.

The news and media relations unit also coordinates media events, press conferences, interviews and specialize information campaigns. There were seven LDWF media events highlighted in fiscal year 2007-2008:

- British Petroleum's "Bad Boy" Buggy Donation in memory of Rick Kasprzak
- Brown Pelican De-listing
- Marine Debris Removal
- Giant Salvinia Spraying on Lake Bistineau
- Apple Snail Assessment
- Joyce WMA Land Acquisition
- Gov. Jindal Discusses Coastal Restoration and Hurricane Protection

## AUDIO-VIDEO PRODUCTIONS

The audio-video unit within PIO handles LDWF's specialized audio and video requests, video news releases (VNRs) and recording of meetings and events. Several events were covered by the audio-video unit, including the official recordings of monthly LDWF Commission meetings. The following is a breakdown of events covered through the A/V unit:

### Specialty video

- National Hunting & Fishing Day 2007
- LDWF Enforcement Division cadet commencement videos (11/07 & 4/08)
- Association for Conservation Information - national awards presentation video
- Using Your Deer Tags (tutorial video)

### VNRs

- Apple Snails
- Lake Bistineau: Aquatic Weed Removal
- Brown Pelican De-listing

## Media Requests

- Fish kill general video
- Discover Louisiana Hunting Program (hunting b-roll)
- National Hunting & Fishing Day 2007
- Joyce WMA Land Acquisition

## PUBLIC INFORMATION AND RESOURCE LIBRARY

The Information and Resource Library is open for public access Monday-Friday, 8 a.m. - 4:30 p.m. Available materials include various natural resource related publications, *Louisiana Conservationist*, WMA maps, historic books and documents, regulation pamphlets and a selection of VHS videos available for loan. The library also houses LDWF's small marketing unit that retails items generated within LDWF. These items include maps, books, posters, manuals and various other documents created by its employees.

The library receives public information request on a daily basis. The total number of information requests received for fiscal year 2007-2008 was 7,424. The breakdown by source was as follows:

Email - 91

Mail - 116

Phone - 4,266

Walk-ins - 2,951

Another element of the library is LDWF's reception area located at the headquarters building in Baton Rouge. This front line contact is operated and maintained by PIO, and serves as the security check point. All inquiries, phone calls and walk-in visitors are cataloged by month. The total number of inquiries for fiscal year 2007-2008 was 20,433 walk-ins and 28,608 phone calls.

## SPECIAL PROMOTIONS/ACTIVITIES

The Public Information Office is responsible for organizing and executing special public and promotional events for the department. These events are the responsibility of all PIO units with each unit contributing their expertise.

Public relations, promotional and public events organized and executed by PIO included:

- Louisiana Restaurant Association Foodservice Expo (LDWF exhibit)
- National Hunting and Fishing Day (Baton Rouge location)
- New Orleans Boat Show
- Step Outside (Baton Rouge location for LDWF employees)

### 2008 Lapsed Angler Direct Mail Marketing Program

In 2008, LDWF partnered with the Recreational Boating and Fishing Foundation (RBFF) to implement a new direct mail marketing program to increase fishing license sales. Designed to identify and target resident lapsed anglers, the program is directed at increasing participation in fishing and generating awareness of the connection between fishing license sales and conservation efforts. By design, the program includes two separate direct mailings of an oversized postcard with coinciding local radio



and online advertising. Southwick Associates has been contracted to conduct all data analysis work.

## WEB SITE

During fiscal year 2007-2008 there were 11,623 hits on the home page. With more than 3,000 available pages on the site, the public has full access to general information, rules and regulations, educational programs and LDWF staff contacts. Efforts continued to improve efficiency, convenience and better accessibility of services to the public. Some of the changes that occurred on the Web site this year included:

- Created flash 2008-2009 deer tagging instructional video
- Modified deer hunting regulations page
- Increased site security
- Updated Request a Speaker, Contact Us and Email delivery functions
- Created, modified and added various components of the header menu and footer navigation
- Added and modified all hunting and fishing regulations
- Updated boating course and boating accidents web pages

- Added new logo to website
- New Natural Heritage/Rare Plants web page (additional 80 plant photos and fact sheets)
- Continuous update of LA Announcements
- Created hurricane information page

## NEW LDWF LOGO

In 2008, LDWF unveiled a new logo. More easily reproduced using modern methods than the former LDWF insignia, the new logo represents Louisiana's land, water and sky, and the types of game most closely associated with each.

The image consists of a trio of Louisiana animals, a duck, a deer and a fish, in silhouette against a stand of bald cypress and a stylized image of Vermillion bay.

Throughout the next fiscal year, LDWF plans to replace vehicle stickers, uniforms and printed materials that bear the older seal.

# PROPERTY CONTROL

The Property Control Section is responsible for managing LDWF's Property Control, Risk Management Insurance Claims and Fleet Management programs. The section is staffed with four full-time employees.

## PROPERTY CONTROL PROGRAM

During fiscal year 2007-2008 this program certified a moveable property inventory which consisted of 8,842 items for a total acquisition cost of \$48,355,651.

Annually, the program is responsible for ensuring that a physical inventory of moveable property is conducted at the various 88 locations throughout the state.

The Property Control Section processed \$9,226,990 in acquisitions and \$5,459,368 in dispositions of inventoried movable property during fiscal year 2007-2008.

## FLEET MANAGEMENT PROGRAM

In accordance with state fleet management regulations this section records, approves and processes requests for personal assignment or home storage, daily vehicle usage, vehicle maintenance and title, registrations and vehicle licenses for LDWF's 562 fleet and 782 other licensed vehicles.

The Property Control Section also manages the 10 vehicles assigned to the Baton Rouge Headquarters Motor Pool.

## RISK MANAGEMENT INSURANCE CLAIMS PROGRAM

The Property Control Section is responsible for filing insurance claims and recovering payment from the Office of Risk Management and third party insurance companies for property damage, automobile physical and liability damage, wet marine, aviation, general liability, boiler and machinery damage. The section is also responsible for filing general liability insurance claims.

Driver's authorization and annual certification for LDWF's approximately 800 employees is also a responsibility of the Property Control section. This process is accomplished in accordance with Office of Risk Management's loss prevention guidelines.

# SOCIOECONOMIC RESEARCH & DEVELOPMENT

The Socioeconomic Research and Development Section conducts economic research pertaining to wildlife and fishery resources, provides support to other department programs and represents LDWF on various study groups, task forces and committees.

The Socioeconomic Research and Development Section (SRD) was established in 1992 within the Office of Management and Finance of LDWF. The duties and responsibilities of the section are:

- to recommend, conduct and coordinate economic research studies pertaining to wildlife and fisheries resources of Louisiana and the Gulf Region.
- to present research findings at appropriate professional and scientific meetings and publish results in departmental publications and peer-reviewed scientific journals.
- to provide information and support to other sections and divisions within LDWF, as well as outside agencies, to assist them in accomplishing their research needs, management tasks and short and long-term objectives.
- to represent LDWF and Louisiana in various study groups, on task forces and on committees established to study, manage and improve wildlife and fisheries resources at the local, state, regional and national levels.
- to administer and implement special programs.
- to perform other activities as directed by LDWF's appointing authorities.

## PUBLICATIONS AND REPORTS

Holloway, Herb A., David R. Lavergne and Dr. Yeong N Chi. "2005 Louisiana Senior Sportsman Survey Hunting Report," Louisiana Department of Wildlife and Fisheries, Socioeconomic Research and Development Section, Baton Rouge, Louisiana, October 2007.

Isaacs, Jack C. and David R. Lavergne. "2007 Louisiana Shrimp Marketing Survey Report," NOAA/U.S Department Commerce Grant Award Number: NA03NMF4520310, Louisiana Department of Wildlife and Fisheries, Office of Management and Finance, Socioeconomic Research and Development Section, Baton Rouge, Louisiana, January 2008.

Southwick Associates, Inc. "The Economic Benefits of Fisheries, Wildlife and Boating Resources in the State of Louisiana – 2006," Louisiana Department of Wildlife and Fisheries, Baton Rouge, Louisiana, May 2008.

## REPRESENTATION ON TASK FORCES, STUDY GROUPS AND COMMITTEES

During fiscal year 2007-2008, staff members of the SRD Section represented LDWF on the following task forces, study groups and committees:

- Gulf States Marine Fisheries Commission Disaster Recovery Program Committee.
- Gulf States Marine Fisheries Commission Arenarius Technical Task Force
- Gulf States Marine Fisheries Commission FIN Social/Economic Work Group.
- Louisiana Blue Crab Task Force.
- Louisiana Clean Marina Program Committee.
- Louisiana Ozone Action Committee.
- Louisiana State Seafood Industry Advisory Board.
- Louisiana Wild Crawfish Task Force.
- Socioeconomic Panel of the Gulf of Mexico Fisheries Management Council.
- Socioeconomic Section of the American Fisheries Society.
- Technical Advisory Committee for USFWS' National Survey of Fishing, Hunting and Wildlife-Associated Recreation.
- Louisiana Recreational Freshwater Fishing Task Force

## FISCAL AND ECONOMIC IMPACT STATEMENTS

With assistance from the various program managers within the offices of LDWF, the SRD Section prepares Fiscal and Economic Impact Statements that accompany the Notices of Intent and Rules considered for adoption by the Louisiana Wildlife and Fisheries Commission. During fiscal year 2007-2008, a total of 21 Fiscal and Economic Impact Statements were developed and published along with the Notice of Intents in the Louisiana Register.

## PROGRAMS, PROJECTS AND SURVEYS

Programs, projects and surveys administered by the Socioeconomic section during fiscal year 2007-2008 included the Clean Vessel Program, the Louisiana Senior Sportsman Survey, the Louisiana Shrimp Dealers' Survey and the Health Advisory Project.

### Clean Vessel Program

The Clean Vessel Program provides funds to owners of recreational boating facilities for construction and renovation of boat sewage disposal facilities. The purpose of this program is to reduce overboard discharge of raw boat sewage in Louisiana's waters by providing boaters with a safe and convenient method to dispose of boat sewage. Under the program, recreational boating facility owners are reimbursed up to 75 percent of the costs of approved activities. Funds are also used to develop and distribute educational and promotional materials to encourage boaters to use these facilities and to promote environmentally responsible behavior. Clean Vessel activities in fiscal year 2007-2008 included:

- The completion of a boat sewage pumpout facility at Paul Allain Properties on Bayou Teche in New Iberia, La.
- The completion of a boat sewage pumpout at Northshore Marine Sales and Service, Inc. on Bayou Castine in Mandeville, La.
- The Clean Vessel Program entered into a Cooperative Endeavor Agreement with Red River South Marina, LLC to construct a boat sewage pumpout facility on Red River, located south of Bossier City in Bossier Parish. The project is anticipated to be completed in 2009.
- The Clean Vessel Program entered into a Cooperative Endeavor Agreement with Moon Lake Resort Partnership to renovate an existing boat sewage pumpout facility on Ouachita River, located north of Monroe in Ouachita Parish. The project is anticipated to be completed in 2009.
- Application materials were provided to several marinas and SRD staff also provided information and assisted with completion of the application documents where needed.
- Educational information and promotional items were distributed at the National Hunting and Fishing Day in Baton Rouge, La. in September 2007, at the Greater Baton Rouge Industry Alliance Annual Golf and Gumbo Tournament in November 2007 and at a Louisiana Clean Water Program Meeting held in Baton Rouge, La. in December 2007.
- A public notice was placed in the 2008 Recreational Fishing Regulations brochure encouraging boaters to properly dispose of their boat sewage. The notice also provided a list of currently available boat sewage disposal facility locations throughout the state.

### Louisiana Senior Sportsman Survey

In cooperation with the Wildlife Division of LDWF, a survey instrument was developed to gauge the participation in various hunting and fishing activities by purchasers of the Senior Sportsman's License. Surveys were mailed to 10,000 license holders in the spring of 2005.

Although a preliminary report on the hunting activities of respondents and statewide estimates of senior hunting activity was provided to the Wildlife Division in fiscal year 2006-2007, the final 2005 Louisiana Senior Sportsman Survey Hunting Report was not completed until October 2007 because of layoffs and associated staffing delays. Results indicated that hunting remains popular with Louisiana senior sportsmen. Deer hunting was the most popular type of hunting, followed by squirrel, duck, rabbit, dove and turkey. Senior hunters spend significant time in the field, averaging 24 hunting days annually.

### Louisiana Shrimp Dealers' Project

As part of LDWF's tasks under the Louisiana Shrimp Industry Disaster Assistance Grant (NOAA Grant # NA03NMF4520310), a survey of shrimp dealers was conducted in the summer of 2007, and the final results published in January 2008. This research outlined the characteristics, practices, attitudes and concerns of Louisiana dockside shrimp dealers.

The survey consisted of 52 personal surveys with individuals who held a wholesaler/dealer license and reported purchasing shrimp in calendar year 2006. The main part of the survey focused on species and forms of shrimp the dealers handled and where and how they sold their shrimp. A second portion of the survey sought to gauge the dealers' familiarity with and assessments of various seafood marketing programs and campaigns implemented by the Louisiana Seafood Promotion and Marketing Board and other entities.

Results of the survey were shared with the Louisiana Seafood Promotion and Marketing Board, Louisiana Sea Grant and other groups.

### Louisiana Health Advisory Project

An agreement was entered into with the Louisiana Department of Health and Hospitals (LDHH) to administer a health advisory angler survey. The objective of this study is to determine baseline anglers' fishing activities, measure angler awareness of the seafood health advisories issued by LDHH, identify angler consumption habits and assess how anglers' fishing activities and consumption habits may have changed as a result of their awareness of the health advisories.

Data collection is scheduled to begin in the summer of 2008 and a final report to be published in the spring of 2009.



# OFFICE OF WILDLIFE

*The Office of Wildlife consists of two divisions, Wildlife Division and Coastal & Nongame Resources Division.*

## WILDLIFE DIVISION

The Wildlife Division is responsible for the state's wildlife conservation program and gathering biological data to properly manage wildlife resources.

## COASTAL & NONGAME RESOURCES DIVISION

Active marsh management is the primary responsibility of the Coastal & Nongame Resources Division. Responsibilities of the division are divided into eight major categories: Coastal Stewardship Operations; Fur and Marsh Management; Alligator Management; Permitting and Mineral Management; Rockefeller Refuge; Habitat Conservation; Education and Maintenance.

# WILDLIFE

## WILDLIFE RESEARCH

A wide range of research and management work is conducted in order to maintain healthy productive populations of game and to provide recreational opportunities for citizens to enjoy these species. Staff biologists gather data on game birds and animals, largely for use in formulating hunting regulations and development of habitat management recommendations. They present seminars to the public and develop workshops for LDWF and other agencies' personnel training. In addition, the staff represents LDWF on state, regional and national committees, providing wildlife input to a wide array of public agencies, non-governmental organizations and private industry. The game species programs are white-tailed deer, upland game, wild turkey, waterfowl, large carnivore, nuisance wildlife and wildlife disease.

### White-tailed Deer

During the 2007-2008 deer season, 161,600 deer hunters harvested 201,200 white-tailed deer. On WMAs during managed deer hunts, there were 3,094 deer harvested. The total hunter effort for the managed deer hunts was 28,815. The Deer Management Assistance Program (DMAP) cooperators harvested 10,541 deer. There were 416 clubs and landowners enrolled in this program. Louisiana Antlerless Deer Tag (LADT) harvest in 2007 was approximately 7,549 with 450 cooperators enrolled.

Deer harvest information was entered into a computer program for analysis and evaluation. This data was used to establish deer seasons for the 2008-2009 season. Harvest data for WMAs and DMAP cooperators are summarized in Federal Aid W-55-22 Report.

Deer harvested during the years 2007-2009 will be documented in the sixth LA Big Game Recognition Program. Trophy deer that qualify for the State Record List are added to this list annually.

Disease and parasite investigations continued on both private and public lands. The Deer Telemetry Project continued with a total of 65 deer captured and marked. Telemetry locations were taken two to three times weekly and ended in January 2009. A research proposal to study the potential genetic implications of the antlerless bucks has been initiated with The LSU AgCenter and the Kerr Research facility in Texas. Efforts by the Wildlife Division to capture and mark deer at Pass-a-Loutre WMA continue. Eight deer were captured and marked there in fiscal year 2007-2008. A project has been initiated in Avoyelles Parish to determine survival and mortality and antler growth characteristics of deer in a large enclosure compared to free ranging deer in similar habitat. A second telemetry project in cooperation with the LSU School of Renewable Natural Resources has been initiated in Union Parish to provide base line information

on survival and mortality and home ranges of deer in pine dominant habitat.

### Upland Game

#### *Dove*

Populations have been monitored nationwide since 1953 by a call-count survey. This survey is used by USFWS to monitor mourning dove population trends. Biologists record the number of doves heard calling for a prescribed time during the nesting season along certain roadsides. Louisiana's dove population is monitored during May and June along 19 routes randomly located throughout the state. The Louisiana breeding population index based on doves heard along the routes was 13.1. This represents a 10 percent increase in doves heard from 2007. The 10-year and 40-year trends illustrate a -0.4 percent decrease and 1.1 percent increase annually, respectively.

Dove hunting regulations for Louisiana in 2007-2008 were set at 70 days with a bag limit of 12 birds. Shooting hours were changed from allowing all-day hunting, except on opening weekends of each segment when hunting was restricted only to afternoon hunting on only the opening day of the season. A survey of resident license holders indicates that approximately 41,200 Louisiana hunters harvested approximately 706,400 doves during the 2007-2008 hunting season; an estimated 22,700 Eurasian collared-doves were also taken.

In addition to dove fields on 11 WMAs, LDWF leases property from private landowners for public hunting. This land is leased for public hunting on opening day only. In 2007, two fields totaling 1,000 acres were leased. During the opening day hunt, 436 hunters participated, bagging 482 doves.

In the spring of 2003, USFWS adopted a National Mourning Dove Harvest Management Plan. Determining current harvest rate in each management unit was identified as a key component of the plan. Wildlife Division personnel banded over 3,600 doves during July-August 2007 as part of a national effort to provide information needed to develop harvest rate estimates for mourning doves.

#### *Quail*

Statewide fall whistling counts were conducted on 32 randomly located routes and an additional six routes on department WMAs and the Kisatchie National Forest. All regions of the state were unchanged from the prior year, except for the west-central and southeast regions which recorded statistically significant increases. However, all regions exhibited long-term (1983-2006) declines. Inferences about population status and habitat conditions were developed based on the combined results of these two survey techniques and general observations

by LDWF personnel during the breeding season. Data are summarized in the Federal Aid W-55-22 Annual Report.

A survey of resident license holders indicates that approximately 1,200 Louisiana hunters harvested 5,800 wild quail during the 2007-2008 season. Hunters were also asked about their harvest of pen-raised quail. About 2,900 hunters harvested over 72,000 pen-raised quail.

LDWF continues to work with its partners to address the decline in bobwhite populations. Habitat development efforts using USDA Farm Bill programs and the State Wildlife Grant Program have been developed and will be operational in 2008-2009.

### **Woodcock**

A woodcock banding program was initiated in 1990 to determine sex and age ratios, site fidelity, movement patterns and harvest rates of woodcock wintering in Louisiana. From November 2007 - January 2008, 456 woodcock were banded statewide. Of these, 226 were banded on Sherburne WMA and 230 on seven other sites, but primarily Red River WMA. Fourteen direct band recoveries by hunters were reported and three indirect (one or more years after banding) were reported. All recoveries were originally banded and taken on Sherburne WMA except one that was banded on Sherburne WMA, but taken in Arkansas. This bird was banded during the 1999-2000 season. None of the birds banded off of Sherburne WMA were reported harvested. Data are summarized in the Federal Aid W-55-22 Annual Report.

LDWF participated in the USFWS' Annual Woodcock Wing Bee in 2007. Data derived from aging and sexing about 12,000 woodcock wings were used to develop trend data on woodcock production and hunter success. These data, in combination with breeding bird surveys, are used to develop management strategies for woodcock. Although many people in Louisiana consider woodcock an under-utilized species, Louisiana's harvest of woodcock at one time ranked among the nation's highest. However, the number of woodcock hunters has decreased by over 90 percent since their peak in the early 1980s. Nonetheless, Louisiana still consistently ranks fourth in the nation for woodcock harvest. A survey of resident license holders indicates that approximately 4,400 Louisiana hunters harvested 25,700 woodcock during the 2007-2008 season.

### **Wild Turkey**

A poult production survey was initiated in 1994 to assess annual brood rearing success and monitor long-term production trends. The 2007 survey indicated a good hatch in the northeast and southeast regions. The remainder of the state experienced fair production.

The most recent hunter harvest survey indicated 17,400 turkey hunters harvested 8,300 wild turkeys during the spring of 2007. The wild turkey population in Louisiana is estimated at about 80,000 birds.

LDWF is involved in two major wild turkey research projects. The department is supporting a wild turkey research project on Sherburne WMA in conjunction with the LSU School of Renewable Natural Resources, with additional support from the National Wild Turkey Federation. This project is investigating the influence of land management activities on raccoon predation of wild turkey nests. LDWF is also engaged in banding gobblers throughout the state. Banding gobblers, and subsequent reporting by hunters of banded gobblers they harvest, provides information needed to estimate wild turkey harvest rates throughout the state.

### **Waterfowl**

Louisiana has approximately 3.5 million acres of coastal marsh that winter large and diverse waterfowl populations. Aerial waterfowl inventories of the entire coastal marsh, as well as associated agricultural lands in north central and northeast Louisiana are conducted each winter.

The mid-winter inventory, conducted in early January 2008, indicated 2.15 million ducks and 807,000 geese wintered in coastal marsh and inland areas of the Mississippi Delta.

Based on federal harvest estimates from the 2007-2008 waterfowl hunting season, 62,277 active duck hunters harvested 1.318 million ducks. This represents a 10 percent increase in the number of duck hunters and a 12 percent increase in duck harvest compared to the previous year. Species composition included 27 percent blue-winged teal, 24 percent green-winged teal, 18 percent gadwall, 10 percent mallard and 8 percent wood duck. Pintail, shoveler wigeon, scaup, ring-necked duck, canvasback and redhead comprised the remainder.

Louisiana goose hunters harvested 189,700 geese during the 2007-2008 waterfowl hunting season, an 18 percent increase from the previous year. White-fronted geese comprised 63 percent of the harvest and light geese (snow and Ross) comprised 35 percent. Canada geese are a locally important bird in the bag, but comprised less than 2 percent of the total statewide goose harvest.

### **North American Waterfowl Management Plan**

Louisiana is continuing to play an important role in the North American Waterfowl Management Plan (NAWMP). Large portions of two joint ventures are located in Louisiana: the Gulf Coast and Lower Mississippi Valley. LDWF has strived to maintain ongoing projects and other activities associated with the NAWMP. In fiscal year 2007-2008, the Manchac Shoreline Protection project funded by a North American Wetland Conservation Act (NAWCA) grant was on hold as additional financial resources were sought to meet estimated costs. In March, the newly formed Coastal Protection and Restoration Authority agreed to fund the shortfall, and an extension of the NAWCA construction deadline was granted. A cooperative USACE expanded project to include a longer breakwater and backfilling to replace lost marsh and increase protection of Manchac

WMA advanced to the design phase. Construction was completed on another NAWCA project to build and restore levees and water-control structures to provide waterfowl and shorebird habitat at Bayou Macon WMA, but a similar project at Boeuf WMA using both NAWCA and FEMA funding was postponed until summer 2008 due to late summer flooding. Negotiations to purchase forested wetland habitat to be added to the Joyce WMA with funding from another NAWCA grant is in progress, and NAWCA funding was awarded to LDWF and Ducks Unlimited to refurbish levees and water-control structures at Russell Sage WMA.

LDWF provided funding, equipment, personnel and/or coordination on four major waterfowl research projects of high priority to NAWMP joint ventures in Louisiana. The mallard telemetry study conducted by Bruce Davis and Paul Link and supervised by Dr. Alan Afton was completed. Data show the importance of forested wetlands and freshwater marsh in northeastern and southwestern Louisiana, respectively, and higher than expected hunting mortality of mallards. Final results are available online ([http://etd.lsu.edu/docs/available/etd-10292007-104319/unrestricted/Davis\\_thesis.pdf](http://etd.lsu.edu/docs/available/etd-10292007-104319/unrestricted/Davis_thesis.pdf) and [http://etd.lsu.edu/docs/available/etd-11132007-195952/unrestricted/Link\\_MS\\_thesis.pdf](http://etd.lsu.edu/docs/available/etd-11132007-195952/unrestricted/Link_MS_thesis.pdf)). Radio-telemetry studies of gadwalls, conducted by Jacob Gray and supervised by Dr. Alan Afton, and mottled ducks, conducted by Bruce Davis and supervised by Dr. Frank Rohwer, were initiated to investigate survival and habitat use of those important coastal Louisiana waterfowl species. Based on the results of an experiment to assess commercial herbicide mixes on controlling woody plants encroaching on the Catahoula Lake basin, 600 acres of lakebed were sprayed with herbicides. Unfortunately, late summer and early fall rains kept LDWF crews from bushhogging additional acreage to reduce spread of encroaching woody vegetation. An additional 1,600 acres were identified for spraying in summer 2008. LDWF personnel participated in an assessment of habitat work in the prairie breeding areas of Saskatchewan funded by Mississippi and Central Flyway states prior to supporting the continued funding of those contracted programs with a portion of LDWF license revenues.

The Louisiana Waterfowl Project (LWP), a private land wetlands development program, has completed its 17th year. This is a cooperative statewide program involving LDWF, Ducks Unlimited, USDA Natural Resource Conservation Service, various pipeline companies and interested private landowners. USFWS became a partner in 1999. During 2007-2008, five projects were completed, restoring or enhancing 6,549 acres. Since program inception in 1992, over 92,500 acres have been restored or enhanced and technical assistance has been provided on 651,243 acres. LWP goals and activities in the northern part of the state continue to shift toward natural marsh or green-tree habitats of the Red River Valley, and away from agricultural areas. LWP south will focus more on marsh habitats and fallow rice fields in the coastal zone.

### **Wood Ducks**

During 2007, LDWF banded 2,405 wood ducks, well above the 2,131 banded the previous year. Approximately 589 were captured in nesting boxes and 1,816 were captured using rocket nets.

The wood duck box program completed its 19th year in 2008. LDWF personnel are maintaining 1,974 boxes currently in use. Over 772 of those boxes are within Region VI and 443 within Region III. That is substantially fewer than the peak of 2,800 statewide a few years ago but many boxes in Regions VI and VII were lost to hurricane-related damage. LDWF's focus is to replace old boxes rather than add to the total. Box utilization is not evaluated every year, but has ranged from 45-100 percent in past years with an average utilization of about 80 percent.

### **Large Carnivore Program**

#### ***Bear Research in Tensas River Basin (TRB)***

In February and March, researchers located radio-collared females in their dens to assess their reproductive status. Bears found to have newborn cubs were then identified as candidates for the late-March translocation. In a multi-agency effort, seven females and their 12 cubs were removed from their ground or tree den in the TRB and placed in artificial den boxes in the Red River Complex (RRC). Those bears are currently being closely monitored through ground telemetry.

The Louisiana reintroduction appears to be proceeding well and provides another example of the successful application of the winter-soft release technique. Survival rates of reintroduced bears have been similar to those of bears in the TRB and reproduction has also started to occur, indicating that a self-sustaining population may soon be reachable. Reproduction has occurred each year since 2005 in the RRC. At least 14 litters have been documented, including a five-cub litter in 2005.

Now that the reintroduction program is in its eighth year (43 females with 94 cubs have been released so far), we will use the survival and reproduction data to determine if the newly established population has become self-sustaining or if further reintroductions are needed. They will also be using similar data collected in the TRB to assess that population's viability and ability to support future reintroductions, should they be deemed necessary.

Researchers spent July/August 2007 collecting the second year of data on Louisiana black bears in the TRB. Data on reproductive status were collected by walking in on radio-collared females and observing cubs. Females with cubs that were translocated to the RRC in central Louisiana are being closely monitored through ground telemetry. Five of the seven translocated females remain at Red River at present and a total of 24 translocated females are being radio-monitored. Six adult females have been live-trapped and outfitted with radio collars for survival analysis so far this summer.

### ***Bear Research in Atchafalaya River Basin***

Researchers spent July/August 2007 collecting the first year of DNA data on Louisiana black bears at the Atchafalaya study area. In fiscal year 2007-2008, 115 hair traps were monitored and hair samples were collected during the 10-week sampling period. Samples have been sent to Wildlife Genetics International, Inc. for DNA analysis.

### **Urban and Nuisance Wildlife**

The Urban and Nuisance Wildlife program coordinates the permitting and issuance of various permits. Nuisance Wildlife Control Operator (NWC) permits and Nuisance Animal Control permits are issued by the section to both qualified professionals and to private individuals who are having problems and are deemed capable of taking care of nuisance wildlife problems on their own. In fiscal year 2007-2008, there were 39 NWCs and 18 Nuisance Animal Control permits issued. The Urban and Nuisance Wildlife unit is also responsible for issuing Wildlife Rehabilitation permits, Special Purpose and Possession and Nongame Quadruped Exhibitor and Breeder permits. In fiscal year 2007-008, 60 Wildlife Rehabilitation permits, 22 Special Purpose and Possession permits and 19 Nongame Quadruped Breeder or Exhibitor permits were issued. The largest portion of daily activity includes technical and general assistance provided to the public, other governmental agencies and non-governmental organizations regarding nuisance animals and injured wildlife. A total of 931 calls were handled by this program in fiscal year 2007-2008.

### **Wildlife Disease**

During 2007-2008 LDWF lost its wildlife disease coordinator. During this posting period other staff biologists filled the gap by submitting diseased animal carcasses to the Southeastern Cooperative Wildlife Disease Study laboratory for diagnostics.

Feral swine survey results of landowners reported that 87 percent of landowners surveyed had feral hog damage on their property.

Chronic wasting disease (CWD) surveillance continued as 427 samples were submitted from all regions of the state to the Southeastern Cooperative Wildlife Disease Study laboratory. Samples were collected from hunter-killed deer which are considered low probability samples, as well as from road-killed, pen-killed and taxidermy specimens which are considered high probability samples. All samples tested negative for CWD.

Surveillance for avian influenza also continued. During the sampling process, nearly 800 migratory ducks and shorebirds were tested for the disease. The majority of the birds were hunter-killed birds, but shorebirds were harvested by agency personnel for testing. Biologists also combined efforts during wood duck banding efforts to acquire avian influenza samples from banded birds. Samples were shipped to both Alabama and Arkansas for testing. No birds tested positive for Highly Pathogenic Avian Influenza.

## **LAND DEVELOPMENT AND MANAGEMENT**

Land development involves both wildlife habitat enhancement and infrastructure improvement to accommodate public use of the 52 WMAs. Typical activities include road and bridge repair and construction, vegetation control, tree planting and harvesting, water control structure operation, pump station operation, wildlife food plot development and boundary maintenance. Coordination and monitoring of mineral exploration activities is also a function of the Wildlife Division on WMAs.

### **Land Acquisition**

Land acquisition and development for wildlife management purposes is the best way to ensure that there is sufficient quality habitat for the state's diverse wildlife resources. During fiscal year 2007-2008 LDWF acquired 11,378 acres of land. Through a NOAA grant a 7,434 acre tract of land known as the Octavia Tract was added to the Joyce WMA in Tangipahoa Parish. Through the same funding, an additional 930 acre tract of land known as the Salmen Tract was also added to the Joyce WMA. Also through a NOAA grant, LDWF acquired a 2,241 acre tract of land known as the Boyce Tract which was added to Maurepas Swamp WMA in St. John the Baptist Parish. A 773 acre parcel of land known as the Martin Tract was finalized and also added to the Maurepas Swamp WMA with the use of NAWCA funds.

### **Forestry Program**

The mission of the Forest Management Program is to improve forest and wildlife habitat on WMAs through sound forest management, reforestation practices and active forest/wildlife research activities.

Public Lands: General forest inventories were not accomplished this year due to extreme late flooding of the Mississippi River on Three Rivers WMA.

Harvest preparations, including sale layout, inventory, regeneration counts, marking, GIS map development, proposal preparations and sale amendments, were completed on Boeuf, Grassy Lake, Ouachita, Pomme de Terre, Russell Sage, Sandy Hollow, Spring Bayou and Three Rivers WMAs. Drought conditions, mill closures and rising fuel costs resulted in limited bids received or no bidding on several sales. Harvests to improve wildlife habitat were attempted and/or conducted on Dewey Wills, Grassy Lake, Ouachita, Red River, Russell Sage, Spring Bayou and Three Rivers WMAs.

Chemical treatments of invasive/non-native species, primarily Chinese tallow tree and cogon grass continued on Lake Ramsey, Pearl River, Sandy Hollow and Sherburne WMAs. Several beetle outbreaks were reported on Sicily Island Hills WMA. Beaver control activities continued with 236 beaver and 13 dams removed from Boeuf and Dewey Wills WMAs. No forest loss was reported this year from beaver activity.

Monitoring efforts on Hurricane Katrina's impact on the forest resources on Pearl River WMA continued in fiscal year 2007-2008. This monitoring included research on woody/herbaceous response, arthropod response and bird response. Also, search efforts for the ivory-billed woodpecker continued on the area with aerial and ground searches initiated and completed.

Reforestation work continued on LDWF properties with concentration on Ouachita and Red River WMAs. Site development and preparation, seedling and seed planting, survival plot establishment and survival checks were all enacted in 2007-2008. Approximately 939 acres were reforested/afforested during the 2007-2008 planting season.

Acorn and various tree seed collections, along with select purchase of quality seed, were conducted to ensure a seed and seedling source for future reforestation efforts. The annual WMA mast survey aids this effort by concentrating collection efforts where the most needed types of tree species are available. The mast survey also provides an indication of the future abundance of forest wildlife species such as squirrels.

GPS work on WMA trails, roads, lakes, compartments and area boundaries was accomplished to aid in the overall WMA management program. Our GIS program development continued with emphasis on updating timber sale data, boundaries, roads and streams data input relative to our WMA forest management and development activities.

Growth Monitoring Plots were read on Bayou Macon and half of Dewey Wills WMAs. These permanent plots aid in monitoring habitat conditions and effects of our forest management program on the habitat components represented on the WMAs.

A Monitoring Avian Productivity and Survival project continued on Sherburne WMA with seven stations and on Pearl River WMA with two stations. Forestry Section personnel provided support for this project, expected to continue for 10 years (this completed year 5). Results from this study will aid us in understanding avian use of the different silvicultural treatments applied across the WMAs.

Other survey and research projects on the WMAs that were supported by Forestry Section staff involved wildlife use of forested habitats and their response to various silvicultural treatments. Continued research efforts, especially long-term, will be sought and cooperatively engaged in to learn more about the forest systems we manage across the state. Continuing education for the Forestry Section staff was practiced through participation at various workshops, seminars, research meetings and conferences throughout the year, in and out-of-state. Completion and publication of the Lower Mississippi Valley Joint Venture (LMVJV) Forest Resource Conservation Working Group's Report, *Restoration, Management and Monitoring of Forest Resources in the*

*Mississippi Alluvial Valley: Recommendations for Enhancing Wildlife Habitat* was a major accomplishment of which the Forestry Program staff were an integral part, and which also contributed to the continuing education of the staff.

## REGIONS AND WMAS

The biological staff in the seven Wildlife Division Regions were reorganized this year in an effort to focus on delivery of a new private lands program, Louisiana Landowners for Wildlife. This reorganization included the assignment of one biologist supervisor in each region to administer the WMAs in that region. These moves are an attempt to better standardize our statewide programs within the regions and focus our biological efforts on program priorities.

### Region I

Consists of seven parishes in northwest Louisiana:

- Bienville
- Bossier; Caddo
- Claiborne
- DeSoto
- Red River
- Webster

WMAs Managed in Region I (total of 77,633 acres):

- Bayou Pierre
- Bodcau
- Jackson-Bienville
- Loggy Bayou
- Soda Lake

Habitat consists primarily of rolling, mixed pine-hardwood and pine plantation habitat bisected by the Red River system and its associated bottomland agricultural lands.

Personnel from Region I administered and managed numerous Wildlife Division programs. Programs included bobwhite quail spring and fall surveys, annual winter eagle surveys, spring dove call routes, dove banding, mast surveys, spring turkey gobbler count surveys, turkey trapping and banding and release activities. The game and non-game breeder permit program was administered as well. Personnel also collected samples from white-tailed deer for herd health projects, CWD monitoring and also administered DMAP/LADT activities. Personnel served as technical wildlife consultants to numerous private landowners, municipalities and state and local government officials and agencies. Region I private lands biologists conducted six on-site inspections of private land enrolled in the Natural Resources and Conservation Service Wetlands Reserve Program. Wildlife Division personnel supervised the development and construction of a new Region I office which is scheduled for completion in early 2009.

The WMAs are managed to provide diverse wildlife habitat supporting numerous game and non-game wildlife species and provide quality outdoor recreational opportunities for the public. A total of 32,958 user days were

estimated for Region I WMAs. Personnel also reviewed and monitored oil and gas exploration activities and interstate pipeline installations on several Region I WMAs.

## **Region II**

Consists of eight parishes in northeast Louisiana:

- East Carroll
- Jackson
- Lincoln
- Morehouse
- Ouachita
- Richland
- Union
- West Carroll

WMAs managed in Region II:

- Bayou Macon
- Big Colewa Bayou
- Floy Ward McElroy
- Ouachita
- Russell Sage
- Union

Habitat types consist of mixed pine-hardwood forests in the West Gulf Coastal Plain, agricultural lands and Mississippi River Alluvial Valley bottomland forests.

Region II biologists conducted a wide range of activities including research and surveys involving mourning doves, Canada geese, wood ducks, wild turkey, bald eagles, bobwhite quail, shorebirds, white-tailed deer, waterfowl and other species. Technical assistance to landowners was provided through the Private Lands Program. Additional effort was expended conducting public meetings, interacting with various universities as well as parish, state and federal agencies in reference to projects of mutual concern, conducting the alligator management program at the regional level and numerous additional projects. Nuisance bear problems required a considerable expenditure of time.

Region II WMAs were managed to provide habitat and population management for deer, turkeys, squirrels, waterfowl, rabbits, doves, shorebirds and other non-game birds, furbearers and other species. Recreational opportunities were provided to thousands of hunters, fishers, campers, sightseers and other public users. Recreational user days recorded for Region II WMAs totaled 41,000. Either-sex modern firearm hunts for deer attracted 2,958 hunters, resulting in a harvest of 440 deer. Additional opportunity for bucks-only gun hunting, muzzleloader, archery and youth-only hunting yielded a reported harvest of 149 additional deer. Youth deer and dove hunters on the Floy McElroy WMA had a successful season. Deer and waterfowl hunting opportunities were provided for wheelchair confined hunters on Big Colewa Bayou and Ouachita WMAs. Turkey hunting was provided on Bayou Macon and Union WMAs. A youth turkey hunt was held on Union WMA in cooperation with the Union Parish Chapter of the National Wild Turkey Federation. Ouachita and Russell Sage WMAs provided quality

waterfowl hunting for several thousand hunters, including some who traveled from Missouri, Arkansas, South Carolina, Mississippi, Texas and Indiana.

WMA personnel performed a variety of development and maintenance functions such as boundary marking, road maintenance, water control structure operation, moist soil management, shorebird management, beaver and other nuisance animal control, farm contract supervision, equipment maintenance, public user data collection, vegetation control, food plot planting and reforestation. They also assisted biological staff in conducting managed hunts. Two pumping station platforms were rebuilt on the Ouachita WMA.

## **Region III**

Consists of six parishes in west central Louisiana:

- Grant
- LaSalle
- Natchitoches
- Rapides
- Sabine
- Winn

WMAs managed in Region III:

- Dewey W. Wills
- Little River
- Alexander State Forest
- Camp Beauregard
- Sabine
- Elbow Slough

Catahoula Lake is an additional area of responsibility.

All of these areas are managed to provide wildlife habitat and outdoor recreational activities. Total user days for fiscal year 2007-2008 were estimated at 179,053. WMA activities increased 22 percent compared to the previous year.

Efforts to improve the road system on Dewey Wills and Little River WMAs continued to be hampered by lack of funding. Construction projects were limited due to budget restraints. However, two small projects were finished on Region III WMAs in fiscal year 2007-2008. An equipment shed located on the Elbow Slough WMA was finished. Construction was also completed on the Sabine WMA compound.

Wet conditions prevented planned mechanical brush control efforts on Catahoula Lake. However, approximately 600 acres were treated chemically. For the second year, samples were collected for avian influenza monitoring. This was done in conjunction with nationwide efforts.

Routine maintenance activities on the state owned areas included road grading, culvert replacement, spot repairs, drainage improvements and beaver control. Boundary work, sign replacement, self-clearing station maintenance, vegetation control and equipment and facility upkeep were performed on all WMAs. In addition, WMA personnel conducted user interviews and operated weigh

stations. Wildlife food plots were planted on Camp Beauregard, Sabine and Elbow Slough. Most WMAs have a number of wood duck boxes that require annual maintenance. Region III procured wood duck boxes for statewide distribution. The technical staff consulted with DMAP clubs and private landowners on wildlife and habitat management issues, trapped and banded wood ducks, collected CWD samples, participated in the dove banding program, compiled data and submitted reports and handled miscellaneous problems along with routine duties. Additional emphasis was placed on the new Private Lands Program, with much time of biological staff spent in training and learning about programs available to private landowners through other government or non-government entities. Region III biologists also conducted inspections of property enrolled in WRP contracts.

#### **Region IV**

Consists of six parishes in east central Louisiana:

- Caldwell
- Catahoula
- Concordia
- Franklin
- Madison
- Tensas

WMAs managed in Region IV:

- Big Lake
- Boeuf, Buckhorn
- Red River
- Sicily Island Hills
- Three Rivers

Habitat types of this region are very diverse, ranging from upland mixed pine-hardwood forests in the west, to the bottomland hardwood forests along the Mississippi River. Agricultural lands generally dominate the landscape, but the alluvial floodplains of the Boeuf, Black, Red, Ouachita, Tensas and Mississippi rivers produce a rich and varied topography that supports a bounty of resident and migratory birds and mammals.

The Region IV office is centrally located in the town of Ferriday, La. These WMAs managed by Region IV provide the public with over 158,000 acres of publicly-owned land on which to hunt, fish and enjoy the natural areas of our state. The self-clearing check stations of Region IV recorded over 34,592 hunters and fishermen and 6,121 non-consumptive users (campers, backpackers, ATV riders, birdwatchers, etc.) during fiscal year 2007-2008. Estimated numbers of hunters, fishermen and non-consumptive users of Region IV WMAs exceeded 88,200.

White-tailed deer remain the most popular species of game animal hunted on Region IV WMAs, and 16,226 hunter efforts were recorded for this species. These hunter efforts produced 1,393 harvested deer, or 11.6 efforts per deer. The rich, fertile bottomland habitats routinely produce trophy class bucks each season, and Region IV is a popular destination for deer hunters coming from all

parishes within the state, as well as from other states nationwide.

Over 6,200 small-game hunters enjoyed a squirrel and/or rabbit hunt on Region IV WMAs. The bottomland hardwoods habitat of these WMAs is a squirrel hunter's paradise, and the thick, weedy vegetation produced by LDWF's extensive reforestation program provides hundreds of acres of attractive habitat for rabbit hunting. LDWF continues to develop and manage moist soil impoundments and greentree reservoirs for waterfowl hunters in Region IV, and approximately 3,700 duck hunters took advantage of these areas. Turkey populations and turkey hunting efforts continue to expand, and over 1,700 turkey hunters harvested 116 turkeys on the WMAs.

LDWF recognizes that the future of hunting and the outdoor sports depends on the involvement of our youth. The lottery youth turkey hunts on Big Lake WMA and Sicily Island Hills WMA continue to be popular. Twenty-six youth turkey hunters participated in these special lottery hunts during 2007-2008. A member of the National Wild Turkey Federation or a Region IV staff member served as a guide for each youth turkey hunter on these hunts. These experienced guides ensured a safe, quality hunt for the youngsters, and taught them turkey hunting techniques, hopefully inducing an interest in turkey hunting that will last a lifetime.

Youth deer hunts on Boeuf and Red River WMAs have been successful events in past years, and additional youth deer hunts were conducted on Big Lake, Three Rivers and Sicily Island Hills WMAs during 2007-2008. Participating in these hunts were 241 youth deer hunters, harvesting a total of 15 deer. The largest expansion in youth hunting opportunities from Region IV can be attributed to a very successful first year of the Buckhorn WMA youth lottery deer hunt. Over a period of six weekend hunts, 51 youth hunters put in a total of 90 days of hunting effort. These youth hunters were rewarded with a total of 27 deer, and many of them harvested their first and maybe even their second deer. LDWF provided 10 elevated box stands for the youth hunters, and both youth hunters and a supervising parent were extremely pleased with the hunt facilities and operations.

An additional feature of this hunt was the provision of four wheelchair-accessible ground deer stands that had been built by Region IV employees. The wheelchair accessible stands were used eight times, and two deer were taken by wheelchair-confined hunters.

The timbered bottomlands of Region IV WMAs are excellent raccoon habitat, and the abundant raccoon population attracts raccoon hunters and high-priced raccoon dogs from several states. Region IV WMAs hosted several UKC and PKC field trial competitions and championship raccoon hunts during 2007-2008. Oftentimes, the Louisiana State Championship raccoon hunt is held on Big Lake WMA.

The "Wish I Could ATV Trail Ride," an annual one-day ATV trail riding event, was held on Boeuf WMA on June 7, 2008. The event attracted approximately 3,400 ATV riders, who entered the WMA to ride the 17-mile long trail. This ATV trail ride is sponsored by a charitable organization and is legislatively mandated. This event has caused extensive ecological damage to a bottomlands hardwood area, and has essentially wiped out the ATV trail that originally formed the route of the trail.

Allowing private land deer hunters to harvest antlerless deer on any day of the legal hunting season has decreased enrollment into the Region IV LADT/DMAP programs. During fiscal year 2007-2008, 187 private landowners and hunting clubs (down 15 percent from 2006-2006) enrolled 301,000 acres (down 10.5 percent from 2006-2007) of property into the programs. The antlered:antlerless harvest ratio has remained relatively stable over the years, and it reflects the quality deer management guidelines that LDWF advocates. As part of the DMAP program, Region IV biologists provide private landowners with biological habitat surveys and harvest recommendations.

Most people associate Louisiana alligator hunting with the traditional marsh and swamp habitats located in the state's coastal zone. However, alligator hunting is very popular in northeastern Louisiana. During 2007, the Region IV alligator program issued 521 tags to alligator hunters (366 tags to private land hunters and 155 to public lakes hunters). A total of 83 hunters used 255 (49 percent of those issued) tags. Alligator hunting in the coastal zone may be largely seen as a commercial activity, but in northeastern Louisiana it is commonly enjoyed as a social event. Entire families submit applications for the limited number of alligator tags issued in the public lakes lottery. Alligator hide prices have dramatically increased in the last few years, and Region IV alligator hunters continue to take trophy-sized 12-13 foot gators.

### Region V

Consists of nine parishes in southwest Louisiana:

- Acadia
- Allen
- Beauregard
- Calcasieu
- Cameron
- Evangeline
- Jefferson Davis
- Vermilion
- Vernon

WMAs managed in Region V (total of 260,000 acres):

- Clear Creek
- Fort Polk
- Marsh Bayou
- Peason Ridge
- Sabine Island
- Walnut Hill
- West Bay

Habitat ranges from extensive coastal marshes, to prairies and vast agricultural areas, to hardwood bottoms, to rolling hills of pine plantations and mixed pine-hardwoods.

Region personnel administered a variety of Wildlife Division activities. These include environmental assessments, technical assistance, research, planning, development, management and alligator and nuisance animal programs. Technical advice is provided to the public, federal, state and national wildlife refuges and local agencies. Region personnel assisted 177 private deer hunting clubs encompassing 360,007 acres with LDWF's DMAP and LADT. The region personnel participated in a nationwide dove banding program by trapping and banding 25 doves. Special public dove hunts were held on two areas totaling 1,000 acres of land LDWF leases in September, with 436 hunters harvesting 483 doves. Region V handled a large number of resident alligator hunting applications issuing 93 licenses, 813 tags and 16 non-resident alligator hunting licenses, and also provided the shipping requirements for alligator hides.

The WMAs are managed for a variety of fish and wildlife species and provide outdoor recreational opportunities. These areas are readily accessible and are very popular with the public. Along with public hunting and fishing opportunities, these areas provide many types of non-consumptive activities. A total of 31,726 people (253,808 hours of recreation) used these areas from November 2007-October 2008.

Managed deer hunts on the four largest WMAs within the region resulted in 23,508 hunting efforts and harvesting 1,008 deer. Two areas offer special deer seasons for youth and handicapped hunters. Over 1,815 turkey hunters harvested 74 gobblers from three WMAs. Special youth turkey hunting seasons were established on two areas which were great successes.

The WMAs are leased free of charge to LDWF for public use from private landowners (Forest Capital Partners LLC, Roy O. Martin, U.S. Army, U.S. Forest Service, Forest Investments, Calcasieu School Board, Molpus and the State of Louisiana). To continue these lease areas, region personnel are required to meet and negotiate annual agreements with the landowners. The leases help the landowners properly manage and maintain their properties for wildlife and public recreation.

LDWF co-partnered with CLECO Power and National Wild Turkey Federation to establish turkey food plots on service rights-of-way and abandoned roads within Clear Creek and West Bay WMAs. LDWF also co-partnered with U.S. Army and U.S. Forest to establish turkey and quail food plots on Fort Polk WMA.

### Region VI

Consists of 13 parishes in south central Louisiana:

- Avoyelles
- Assumption
- most of Iberville

- Iberia
- Lafayette
- Pointe Coupee
- St. Landry
- St. Martin
- St. Mary
- Terrebonne
- West Baton Rouge
- portions of West Feliciana and Ascension

WMAs managed by Region VI (total of 120,077 acres):

- Acadiana Conservation Corridor
- Attakapas
- Elm Hall
- Grassy Lake
- Pomme de Terre
- Sherburne
- Thistlethwaite
- Spring Bayou

One USFWS refuge (Atchafalaya NWR) and a USACE property (Bayou des Ourses), is also managed within Region VI.

Habitat types range from mixed pine-hardwoods, to backwater bottomland hardwoods interspersed with agricultural lands, and cypress-tupelo swamps, to open-water areas.

Region VI personnel administer and manage a variety of wildlife oriented activities. Region personnel work in conjunction and provide technical advice to many different agencies, including other state agencies, USFWS, USACE, LDNR, LDEQ, Department of Agriculture and local parish entities. Region personnel administer environmental assessments, technical assistance, research, development/management and alligator and nuisance animal programs. Personnel assist with projects ongoing in the region, such as deer, woodcock, turkey, black bear and non-game research projects. Region biologists worked with 113 DMAP clubs encompassing over 267,126 acres on which approximately 3,700 deer were harvested. In addition to DMAP, LADT tags were issued to 70 cooperators, involving 97,105 acres on which approximately 800 deer were harvested.

The WMAs are maintained and managed to provide outdoor activity opportunities for all user groups, including both consumptive and non-consumptive. WMA personnel performed a variety of development and maintenance functions such as boundary marking, building maintenance, road maintenance, water control structure operation, moist soil management, beaver and other nuisance animal control, farm contract supervision, equipment maintenance, public user data collection, vegetation control, food plot planting, reforestation and conducting managed hunts. Recreational user days recorded on Region VI WMAs totaled 63,768 by hunters, fishers, campers, sightseers, bird-watchers and other public users. Managed deer hunts were held on these areas, with over 6,500 user-days recorded, with 550 deer harvested on these hunts. In addition to the managed (either-

sex gun) hunts, bucks only, youth/handicapped, archery and muzzleloader hunts also took place, where an additional 307 deer were harvested. Turkey hunts were held on four WMAs, where 87 turkeys were harvested by an estimated 1,335 users. Dove fields are maintained, along with many acres of food plots. Biologists and technicians maintain and monitor over 800 wood duck boxes, conduct pre-season banding, collect samples for CWD, avian influenza and other disease testing and respond to numerous nuisance animal complaints, illegally held deer and sick deer complaints. Biologists also assisted LSU researchers in a deer telemetry study.

Youth lottery deer, duck and turkey hunts were held in Region VI, with great success on these hunts. Physically challenged wheelchair-bound waterfowl and deer hunts were held in Region VI, with much participation and success from this group of hunters.

Routine maintenance activities on Region VI areas included road grading, culvert replacement, spot repairs, drainage improvements and beaver control. Boundary work, sign replacement, self-clearing station maintenance, vegetation control and equipment and facility upkeep were performed on all WMAs. In addition, WMA personnel conducted user interviews and operated weigh stations. Wildlife food plots were also planted on several Region VI WMAs.

## Region VII

Consists of 18 parishes in southeast Louisiana:

- most or all of Ascension
- East Baton Rouge
- East Feliciana
- Livingston
- Orleans
- Jefferson
- St. Helena
- Tangipahoa
- Washington
- St. Tammany
- St. Bernard
- St. James
- St. John
- Plaquemines
- St. Charles
- Lafourche
- West Feliciana
- a portion of Iberville

WMAs managed in Region VII (total of 164,837 acres):

- Pearl River
- Joyce
- Manchac
- Sandy Hollow
- Ben's Creek
- Hutchinson Creek
- Tunica Hills
- Maurepas Swamp
- Tangipahoa Parish School Board
- Lake Ramsey

Habitat types range from marshes and swamps, to rugged loess bluff uplands.

The WMAs are open for public use such as hunting, fishing, bird watching, sightseeing, boating, hiking, horse-back riding, photography and berry picking, as well as many other outdoor recreational activities. Over 74,000 user days were recorded on the WMAs during fiscal year 2007-2008. An alligator season was allowed on four Region VII WMAs harvesting 851 alligators which generated a return of \$91,945 to the Conservation Fund. An additional \$147,773 was added to the fund as a result of alligator egg collections on the WMAs. Region personnel began posting some 12,600 acres of new WMA lands acquired during the year as well as maintaining existing WMA boundaries, buildings, equipment, roads and trails. Managed public hunts were also conducted on several region WMAs.

As with other regions during fiscal year 2007-2008, Region VII reorganized its biological staff to directly focus on assistance to private landowners and region WMAs. Region staff assisted in the development of a new statewide "Landowners For Wildlife" (LFW) Private Lands Program. Biological staff attended and held numerous seminars directed toward improving wildlife habitat on private lands. This new department emphasis has resulted in more biologists' time spent on field visits to Forest Stewardship, DMAP, LADT and LFW participant properties. WMA habitat improvement work continued to be a region priority. 500 acres of marsh at Pearl River WMA was burned to remove hurricane debris and encourage new herbaceous growth. Continued encroaching vegetation control on 25 miles of trails and 20 acres of food plots was also done on the WMA. On the Sandy Hollow WMA, 1700 acres of longleaf pine habitat were enhanced by prescribed burning. Three miles of bird dog field trial courses were maintained, as well as six dove fields and 10 acres of upland bird food plots on Sandy Hollow. In cooperation with the National Wild Turkey Federation, several new food plots were established on the Tangipahoa Parish School Board WMA.

Region biologist and technicians worked with 120 DMAP cooperators on 245,925 acres and 23 LADT cooperators on 19,007 acres, maintained 177 wood duck boxes, participated in the statewide mourning dove banding program, responded to numerous deer and nuisance animal complaints, provided technical assistance to the public, conducted public meetings and collected white-tailed deer brain and lymph node samples across the region for CWD testing. Duck trapping operations were conducted with 862 wood ducks and 484 black-bellied whistling ducks being banded. Biologists captured four wild turkeys on Tunica Hills and surrounding properties as part of the ongoing statewide gobbler mortality study. Region biologists continued to work with the deer program manager and USFWS to collect deer reproductive data to better pinpoint peak deer breeding periods within the region. Biologists continued to assist LSU researchers in the Region VI radio telemetry deer study.

Feral hogs that can threaten native wildlife populations continue to expand in many parts of the region. Aggressive control methods have been effectively used on certain WMAs such as Pearl River to reduce their numbers. In cooperation with LDAF, a radio telemetry study at Sandy Hollow WMA on feral hogs was conducted to examine the use of such equipment to control isolated populations.

## EDUCATION

Conservation education is a vital part of the LDWF mission. The Education Section, within the Wildlife Division focused on three main areas: Hunter Education; Aquatic Education; and General Wildlife Education.

### Hunter Education

LDWF's Hunter Education Program provided training and certification in hunter education, bowhunter education and muzzleloader education as well as assisting with other related educational programs.

### Administration

Certification cards for hunter, bowhunter and muzzleloader education student and instructor courses were provided as needed for persons completing these courses. Hard copies were filed as well as computer based records for courses administered.

The education section within LDWF underwent reorganization this year. Where some educators had handled hunter education duties and some aquatic education duties, all educators now engage in all educational duties as a part of their normal job functions. This now makes 14 individuals available to handle educational services in addition to three supervisors, one education manager, one program manager and one administrative assistant position. Three wildlife technicians are also used to staff LDWF operated shooting ranges, and one maintenance repairer to perform maintenance features at an education facility. The hunter education program is organized within the Office of Wildlife.

The education manager and one supervisor attended the Region IV hunter education administrator meeting in Charlottesville, S.C. in January 2008. Topics of discussion included upgrading of the Region IV alternative study course and changes in the International Hunter Education Association (IHEA) hunter education standards. Dr. Jim Neale advised that the revised version of the Region IV on-line course would be ready in spring of 2008; it was made available for public use in May of that year. Much discussion centered on revision of the IHEA hunter education standards due to the fact specific learning objectives would be removed.

In May of 2008 Education staff attended the IHEA conference in Fairview Heights, Ill. The revised IHEA standards were voted on with the certification standards being accepted and specific performance based learning objectives to be considered at a later date.

### ***Student Certification***

A total of 524 hunter education courses were provided to the general public statewide resulting in the graduation of 18,172 students. Louisiana also provides bowhunter education for persons hunting on national wildlife refuges and out of state where required. A total of 54 bowhunter education student courses were taught resulting in 1,253 people being certified. The alternative study method for taking hunter education courses continues to be offered to the public in Louisiana. Out of the 17,931 students certified in 515 hunter education courses, 5,997 were certified in 168 courses through the home study method.

### ***Instructor Training***

A total of 146 new volunteer hunter education instructors were trained and provided with credentials to teach hunter education in Louisiana through 13 instructor courses. In addition, two bowhunter education instructor courses resulted in 19 persons being certified to teach bowhunter education. One statewide workshop was planned and carried out at Camp Grant Walker in Pollock, La. with 100 instructors in attendance. In February 2008 the hunter education section conducted a trapping workshop taught by the Louisiana Trappers Association. A total of 12 persons were in attendance. Instructions were given in trap selection, nomenclature and setting techniques.

Volunteer instructors contributed 26,482 hours of in-kind service time for fiscal year 2007-2008.

### ***Hunting Incidents***

A total of eight hunting incidents were documented in fiscal year 2007-2008. Five were class A incidents, all non-fatal. Three incidents were class B which amounted to two tree stand incidents and one stroke while hunting. Results were compiled by type and category and entered into the National Hunter Education Incident Database and made available to volunteer instructors.

### ***Shooting Range/Training Facilities***

LDWF continues to staff and operate two education centers and four public shooting ranges:

#### ***Bodcau Shooting Range***

Bodcau Shooting Range is located in Webster Parish on Bodcau WMA. Upgrades to this shooting facility have been completed with monies provided by the Bossier Parish Police Jury and man power by the Bossier Sheriff's Office. Funding provided has lead to the extension of the existing rifle range, addition of a clay target shooting station and archery range, a new fence between the parking lot and range, and a building that will serve as headquarters and classroom. A water line has been installed by LDWF to provide water to the range. The range is open to the public four days a week and is staffed by one technician.

#### ***Woodworth Education Center***

The Woodworth Education Center located in Rapides Parish contains both classroom and sleeping facilities and a public shooting range. Rifle and shotgun shooting opportunities are offered to the public four days a week.

The center is staffed by one manager and technician. Volunteer help to operate the range is provided by the Bayou State Muzzleloaders Association. In June a new condenser unit for one A/C unit became inoperable and had to be replaced.

#### ***Sherburne Shooting Range***

Located in Pointe Coupee Parish the Sherburne Range consist of two skeet fields, one archery range, one handgun range and one rifle range. It is operated by one technician and is available to the public seven days per week. Range one is pending reconstruction. In April a contractor was secured to lay concrete walkways with PVC pipe installed to serve as a better platform to hold target frames. The job was executed but over 50 percent of the work was determined to be unacceptable. An on-site meeting was held with the contractor responsible for the work and he had agreed to demolish and reconstruct the work determined unacceptable. The work determined to be unacceptable was demolished and the concrete piled up near the range. A new vendor is being sought at this time to finish the job.

#### ***Waddill Outdoor Refuge***

The Waddill Outdoor Refuge in East Baton Rouge Parish provides a needed outdoor education environment in an urban setting. A classroom, solar power shotgun range and outdoor setting provide an ideal opportunity to teach hunter education. In addition to hunter education, the refuge is visited by many individuals year round to attend various educational courses, fish and enjoy nature. The refuge is staffed by one manager and one technician.

#### ***Honey Island Shooting Range***

The Honey Island Shooting range is located on Pearl River WMA in St. Tammany Parish. The range is managed under an MOU agreement by Southeast Louisiana Firearms Safety, Inc (SELFS). This group is a non-profit organization that completely handles all aspects of operating the range for public use. In addition some members of their group serve as volunteer hunter education instructors and provide hunter education courses at the range. Shotgun, rifle and handgun shooting opportunities are available to the public. The SELFS group constructed an open-sided pavilion to conduct courses.

Volunteer hours accrued from the Woodworth and Pearl River Ranges totaled 5,755.

### ***Aquatic Education***

The Education Section of the LDWF introduces people to the sport of fishing and promotes awareness of the aquatic resources in the state through both public programs and teacher training.

### ***Administration***

The education section within LDWF underwent reorganization this year. Where some educators had handled hunter education duties and some aquatic education duties, all educators now engage in all educational duties as a part of their normal job functions. This now makes 14 individuals available to handle aquatic educational services in

addition to three supervisors, one education manager and program manager and one administrative assistant position. One maintenance repairer is employed to perform maintenance features at an education facility. The aquatic education program is organized within the Office of Wildlife.

Volunteer hours from field activities were documented and stored electronically as well as hard copies filed. Standard equipment such as fishing tackle to be used for fishing programs were purchased as needed. In addition, aquatic staff participated in the following conferences: National Marine Educators Association; Southern Association of Marine Educators; Louisiana Science Teachers Association; Louisiana Environmental Educator's Symposium; American Fisheries Society Conference; Becoming An Outdoors Women Coordinators Conference; and Project WILD Conference.

### ***Curriculum and Training***

#### ***Clinics***

Aquatic education clinics were held statewide that resulted in 8,135 volunteers hours generated. Subjects covered in aquatic education clinics include outdoor ethics, fish identification, tackle selection and fishing techniques. Participants also are involved in actual hands on fishing.

#### ***Workbooks***

Three publications were distributed to teachers in the school system for classroom use:

- "Fishing For Fun" - 11,705
- "Let's Go Fishing" - 8,242
- "Finnie The Fingerling" - 4,847

These publications promote an appreciation of aquatic resources and their habitat.

#### ***Teacher Workshops***

Teacher workshops are conducted statewide in an effort to provide training in aquatic education that can be brought back to the classroom. The following workshops were conducted:

- Project Wild: Aquatic: Teachers are provided with guidance and materials to conduct classroom activities to make students aware of aquatic resources and their habitat. A total of 179 teachers were trained in 13 workshops on the use of Project Wild: Aquatic materials. One facilitator workshop was conducted which resulted in 11 individuals being trained.
- Wetlands Education Training (WETshop): WETshop is a week long teacher work shop that stresses the important role wetlands play in our coastal ecosystem. Teachers spent time learning about wetland plant communities, aquatic life and how fragile coastal ecosystems can be. Partial funding was made possible through a grant by the Barataria-Terrebonne National Estuary Program, a partner with LDWF in hosting this workshop. A total of 19 teachers were trained and equipped to return to their respective jurisdictions and train additional teachers on how to educate their classroom students in wetlands education.

- Costal Wetland Workshops: Costal Wetlands Workshops were held to train teachers on the subject of wetlands ecology in coastal habitats. Wonder of Wetlands manuals as well as other resources were issued to enable teachers to bring this knowledge back into the classroom. A total of 10 workshops were held statewide which resulted in 239 teachers being trained.

### ***Hatchery Education***

***Hatchery Education:*** Educational programs were held at the Booker Fowler hatchery in an effort to demonstrate the techniques used to raise fish in an artificial environment. Tours of the hatchery were conducted for school students and the general public as well. Education materials and special presentations were made available through the visitors' center. There were approximately 397 students educated through the hatchery aquatic education program this fiscal year.

***Native Fish in the Classroom (NFC):*** A multidisciplinary, classroom-based aquaculture stewardship project for intermediate to high school students. The overall goal of the NFC project is to assist students in developing an attitude of stewardship toward natural resources and to create a constructive, active learning situation in which they can explore strategies for sustaining aquatic ecosystems. Students obtain hands-on, real-science knowledge of the state's native aquatic resources. During the 2007-2008 school year, 15 Louisiana teachers participated in the NFC project. Teachers attend several workshops and meetings to ensure successful preparation for receiving paddlefish eggs in the spring. Teachers participated in the spring paddlefish spawn where they receive paddlefish eggs. Louisiana paddlefish were raised from eggs to fingerlings which were returned to the LDWF Booker Fowler Fish Hatchery. The hatchery then returned the fish to the wild.

***Finnie the Fingerling:*** This workbook was developed to provide guidance on the inner workings of how the day to day operations of a fish hatchery are conducted. Readers are taken on a guided tour by "Finny the Fingerling" of the Booker Fowler fish hatchery. Information is provided on how fish are spawned and released into the wild.

### ***General Wildlife Education***

#### ***National Hunting & Fishing Day***

The general public was shown appreciation of its support by being invited to join LDWF in an open house atmosphere that involves hands on activities and a closer look at LDWF sponsored programs. The Education Section provided training for the public in the safe use of shooting equipment. Four LDWF sponsored events were held at Bodcau Shooting Range, Monroe Office Facility, Woodworth Education Center and Waddill Outdoor Refuge. A total of 7,000 individuals visited these locations and enjoyed hands on outdoor activities.

#### ***Becoming an Outdoors Woman (BOW)***

Becoming an Outdoors Woman continues to be a popular

program with women interested in learning more about outdoor recreational sports. Hunter education staff members conducted activities which taught the safe handling of equipment for hunting and recreational shooting. One statewide event was conducted in April of 2008 with 130 participants in attendance.

***Families Understanding Nature (FUN) Camp***

Families Understanding Nature provides a forum for fun and education to a parent and youth through a weekend of staff lead outdoor activities. Family members are introduced to the safe use of firearms and other recreational shooting equipment. Two events were held: one father/child in May and one mother/child in October.

***National Archery in the Schools Program (NASP)***

The Louisiana state NASP tournament was held Feb. 23, 2008 at C.E. Byrd High School in Shreveport, La. Currently 37 schools are conducting NASP training as a part of their curriculum.

# COASTAL & NONGAME RESOURCES

## ROCKEFELLER WILDLIFE REFUGE

Rockefeller Wildlife Refuge, located in coastal Cameron and Vermilion parishes, was created in 1920 through a land donation developed by E.A. McIlhenny. He persuaded the Rockefeller Foundation to deed the area to Louisiana for preservation and protection of migratory birds. The area is intensively managed for waterfowl and is one of the most important wildlife areas in the United States. It serves as an outdoor laboratory for one of the nation's largest wetland ecosystems.

The Rockefeller Foundation modified the deed in 1944, giving reversionary interest in the property to the USFWS if the state fails to honor the terms of the deed. Changes to the deed, one of which requires periodic reviews of refuge programs, have been made by mutual consent between USFWS and LDWF.

During fiscal year 2007-2008, recovery following Hurricane Rita, which struck the Louisiana coast on September 23, 2005, continued as did most management and research programs. It is estimated that the hurricane caused approximately \$16 million in damage. All of the management unit levees and water control structures were damaged to varying degrees. Temporary emergency repairs continued utilizing LDWF equipment to prohibit saline Gulf waters from impacting LDWF and private lands adjacent to the refuge. Plans are being made to refurbish approximately 49 miles of levees from Deep Lake to Rollover Bayou in order to exclude saline water from the Mermentau Basin which will protect the agricultural and rice growing areas in northeastern Cameron and Vermilion parishes. Temporary repairs continued on the office, general quarters dormitory and several residences.

To aid in orderly hurricane recovery, the administration, in consultation with an architectural firm and a master plan, elected to proceed in phases. Phase 1 reconstruction included rebuilding of the workshop, equipment, boat storage and materials storage buildings. Initial emphasis was placed on the equipment building since it had less damage and could accommodate maintenance personnel during the winter of 2007-2008 while reconstruction continued on the workshop. Recovery is a slow process with Phase I rebuilding being completed in February 2008.

## Marsh Management, Restoration, Habitat Enhancement and Mineral Management

Rockefeller's staff maintains over 200 miles of levees and 40 water control structures which result in conservation of approximately 76,000 refuge wetland acres, and also enhances water management capability of 100,000 private sector acres within the Mermentau River Basin. Objectives of maintenance and manipulation of the refuge's system of levees and water control structures vary somewhat by management unit, but generally goals are to maintain marsh health, provide conditions favorable for production of waterfowl food plants and incorporate multi-species management when possible.

Water control structure, levee and bridge repairs continued as a result of damage sustained from Hurricane Rita. Portions of the south Unit 15 levees and the Old Cop-Cop Bayou structure were repaired. Two bridges and approximately two miles of limestone road were repaired allowing access to Lake 14 management unit and the Lake 14 boat launch, enhancing 2,400 wetland acres. These repairs reestablished access to Unit 14 and tidal areas on the southeast end of the refuge. Murphy Road was repaired on the eastern boundary of the refuge which protected approximately 2,000 private wetland acres adjacent to the road.

Rockefeller's Superior Canal boat shed was completely destroyed during Hurricane Rita. During fiscal year 2007-2008, Rockefeller staff completed demolition and reconstruction of this structure.



Many of the lift pumps and their associated pump sheds were damaged following Hurricane Rita. Rockefeller staff pulled the engines and pumps at each location and rebuilt the pump sheds at the Unit 1, Unit 8, Unit 13 and Unit 14 structures. Repairs are being made to the pumps and engines and these structures should be fully operational by fiscal year 2008-2009.

Approximately two miles of ditches were cleaned in Unit 1 and the West Goose Pasture to reestablish water flow and management capabilities within the units. This action enhanced approximately 1,330 acres.

Rockefeller Refuge staff continued working with Ducks Unlimited and a contract engineer to implement a \$470,000 North American Wetlands Conservation Act grant to replace two water control structures at Price/Tolan Lake. The three-pipe and four-pipe structures will be replaced to reestablish historic hydrology to the area which will enhance approximately 10,000 private and 7,500 refuge wetland acres. Construction will begin in fiscal year 2008-2009.

LDNR, in conjunction with Providence Engineering, funded a \$1.5 million project to study beneficial use of hurricane debris and dredge material to rehabilitate abandoned oilfield canals. Hurricane debris was hauled to a canal site on the refuge along the east side of East End Locks Road and mixed with hydraulic dredge material from Humble Canal. Part of the study was designed to evaluate various mixture ratios of debris to soil levels. Ratios examined were 60/40, 50/50 and 30/70 debris to soil, respectively. The area was planted with vegetation and completed in October 2007.

Phase I of the dedicated dredging project to reclaim 170 acres of brackish and salt marsh was completed in February 2008. Hydraulic dredge spoil was placed in the



area from adjacent canals creating 4.7 brackish wetland acres along East End Locks Road. The area was planted with wiregrass during summer 2008. Reimbursement for the project will come from the newly established Rockefeller Mitigation Bank.

Rockefeller staff conducted the fourth year of vegetative transects on Rockefeller Refuge. The survey consisted of over 1,500 survey plots spread evenly throughout the refuge. All species present as well as a percent cover of each species were recorded. This long-term program is designed to monitor changes in vegetative composition within individual management units. These changes in vegetative composition will be used in future management decisions. The 2007 vegetative survey was the first survey conducted after Hurricane Rita.

#### **Waterfowl Program**

Rockefeller and New Iberia biological staff conducted five waterfowl surveys on three coastal refuges, one waterfowl preserve and four WMAs which included Rockefeller Refuge, State Wildlife Refuge, Marsh Island Refuge, White Lake Wetlands Conservation Area, Atchafalaya Delta WMA, Point-aux-Chenes WMA, Salvador WMA and Pass-a-Loutre WMA.

In 1994, Rockefeller Refuge began a long-term mottled duck banding program to monitor annual survival rates and analyze distribution along the Gulf Coast between Texas and Louisiana. The banding effort is now a cooperative endeavor with Texas and Louisiana and involves many state and federal biologist, technicians and student workers. Some of the early analysis of data has shown high variability in survival rates with little mortality being attributed to hunting. Coastal and Nongame Resources Division biologists completed the 14th year of this program during fiscal year 2007-2008. LDWF personnel banded 2,611 mottled ducks statewide in 2007, bringing the total from 1994-2007 to 31,122.

Rockefeller and New Iberia staff conducted the visibility correction portion of the first annual Mottled Duck Breeding Bird Survey.

Rockefeller staff assisted LSU and Ducks Unlimited with two telemetry projects. In winter 2007, 14 female and 11 male gadwall were captured, fitted with satellite transmit-



ters and released on and around the Rockefeller area. This study was designed to provide an unbiased assessment of habitat use and large scale movement of gadwall along the Chenier Plain. In summer 2007, 99 mottled duck females were captured and fitted with internal VHF transmitters. All 99 mottled ducks were captured and released by Rockefeller and other LDWF staff. This study is designed to study seasonal survival of Western Gulf Coast mottled ducks, the extent and timing of movements along the Gulf Coast and habitat use during the molt and breeding season.

Rockefeller staff began assisting Dr. Sammy King and LSU with a long-term study to evaluate White Lake, a potential relocation site for a resident population of whooping cranes. Although, the study will focus on White Lake it will also evaluate other wetlands in the area including but not limited to Rockefeller and Marsh Island.

Rockefeller staff assisted Dr. David Kremetz of the University of Arkansas Cooperative Research Unit with a pilot project on king rails. A total of 20 king rails were equipped with VHF transmitters and tracked for a month. The purpose of the project was to evaluate the impact of the PPT platform on the rail's health.

Rockefeller staff attended TX/LA Mottled Duck Management Conference in Beaumont, TX.

### **Alligator Removal and Fur Trapping**

A successful nuisance alligator trapping program to remove animals from high human use areas was conducted on Rockefeller Refuge during September 2007. Normally, 320 alligators are harvested, but the quota was reduced 50 percent due to the deleterious effects of Hurricane Rita in 2005 combined with a 2006 drought that degraded alligator habitat on the refuge. Eight hunters were issued 20 tags per hunter and removed 153 alligators in three days. One hunter harvested 13 alligators. The remainder of the hunter's tags (7) were confiscated due to technical issues associated with alligator tagging procedures in the field. Average size was 7.32 feet with an average live length value of \$37.23 per foot.

Fur trapping did not occur on Rockefeller Refuge during fiscal year 2007-2008 due to the low numbers of furbearers present on the refuge after Hurricane Rita in 2005. The 10-foot plus storm surge over the marsh followed by a prolonged drought in 2006 significantly reduced furbearers in the region.

### **Watchable Wildlife Program**

#### ***Bald Eagles***

Seven helicopter survey days totaling 51 hours of flight time were used to monitor Louisiana's nesting bald eagles. During fiscal year 2007-2008, 530 young were produced from 387 active nests. The number of young produced increased this year along with the total number of active nests. The average number of young/successful nests has remained constant the last eight years, indicating a stable population. The average number of young/

active nests increased from 1.26 to 1.37 in 2006-2007 and 2007-2008, respectively. The number of active nests continues to increase over time, and the population is increasing throughout Louisiana. Bald eagles begin nesting their fifth year of life and do not really establish permanent nests until their seventh year. Young eagles produced in Louisiana are coming into the nesting population at an exponential rate as a result of favorable nesting conditions and good survival over the past decade. The 2005 hurricanes did not significantly impact Louisiana's nesting bald eagles. The bald eagle population is healthy with a 15.2 percent increase in the number of active nests from 2006-2007 to 2007-2008.



#### ***Brown Pelicans***

Brown pelicans were common Louisiana coastal residents in the early part of the 19th century with the population ranging from 12,000 to 85,000 prior to 1930. Nesting ceased in Louisiana in 1961 and disappeared from the state in 1963 due to the use of pesticides, especially Endrin, a DDT relative. From 1968 to 1980, 1,276 7-8 week-old young were reintroduced to Louisiana from Florida at three release sites. Over 375,000 brown pelicans have been produced in Louisiana since 1971. Fourteen brown pelican nesting colonies were active and produced 24,620 young during fiscal year 2007-2008. Production, prior to hurricanes Katrina and Rita in 2005, was 25,298, declining to 17,566 in 2006 as a result of hurricane damage to nesting habitat. Nesting habitat conditions improved in 2007 and production increased to 24,085, and was similar at 24,620 young from 14 colonies for fiscal year 2007-2008. A total of approximately 91,560 young were produced in the four-year period from 2005-2008 which exceeds the high population estimate of 85,000 prior to 1930. The brown pelican population is maintaining sustained growth at this time. LDWF will continue monitoring to detect population changes. As a result of sustained population growth in Louisiana the brown pelican is scheduled to be removed from the endangered species list in the near future.

A conservation milestone was reached in 2003 when brown pelicans began nesting on Rabbit Island in Calcasieu Lake. Brown Pelicans expanded naturally outside their historic range. During fiscal year 2007-2008, 175 nests produced 350 fledglings. LDWF personnel

banded approximately 63 flightless young to study survival and dispersal of these birds. LDWF is working on a plan to create additional nesting colony habitat in Calcasieu Lake to promote the expansion of the brown pelican population in southwest Louisiana.

The brown pelican translocation project continued with 105 7-8 week-old young moved from Last Island to Whiskey Island. During fiscal year 2006-2007, 112 young were translocated. The second component of the four-year study was launched in 2007-2008 studying life history with special emphasis on nesting ecology of the brown pelican. The project is a cooperative effort between the University of Louisiana at Lafayette, LDWF and USFWS. The project will continue until 2011.

### Recreational Use

Marsh enhancement units managed by structural means have proven popular with sports fishermen, resulting in overcrowding in many places. Damage to levees and alterations of automatic features of structures that regulate water salinities and levels has been a problem. Heavy public usage has placed a strain on boat launch and parking facilities as well. According to data collected in fiscal year 2007-2008, it was estimated that Rockefeller Refuge experienced approximately 126,000 man-days of public use. Of this, approximately 122,000 man-days were used for consumptive use, and about 4,000 were used for non-consumptive activities.



### Estuarine Fisheries Program

Rockefeller Refuge staff's ability to manage estuarine organism populations remain severely limited due to the destruction caused by Hurricane Rita. The situation will continue until repairs to critical levees and water control structures are completed and functioning properly. Though the primary goal of the division is habitat management/restoration, personnel are able to strategically allow ingress and egress of organisms into the Superior Canal complex and several other management units when

habitat integrity will not be compromised. Rockefeller Refuge continued its fisheries monitoring program in conjunction with various habitat management/restoration strategies. Rockefeller Refuge staff continued efforts in stocking Florida-strain largemouth bass to supplement bass populations on the refuge. Approximately 37,000 fingerlings were released in May 2008.

### Technical Assistance/Outreach/Education

Refuge personnel continued its outreach program. Personnel hosted several events to educate elementary, high school and college classes in wildlife and wetlands sciences.

Rockefeller Refuge again hosted the annual 4-H Marsh Maneuvers Camp. Fifty-five students from 15 Louisiana parishes participated in this month long camp which is designed to educate high school students in the importance of coastal marsh erosion, restoration, conservation and ecology.



### Research and Publications

Cooperative studies conducted at Rockefeller Refuge concerning wildlife and wetlands ecology during fiscal year 2007-2008 include:

Effects of flooding on *Spartina patens* (LSU)

## FURBEARER MANAGEMENT

### Monitoring Fur Harvest

The 2007-2008 furbearer harvest was monitored by compiling distribution and total harvest data. Each year, fur buyers and dealers are required to submit reports providing information on pelts purchased by species and parish of harvest. Annual audits of all fur dealers provide a record of total pelts by species shipped from Louisiana. River otter and bobcat possession tags provide data on timing and location of all bobcat and otter harvested in the state. These tags are necessary to insure that Louisiana otter and bobcat are tagged with federal export tags (a federal requirement for out-of-country shipment).

Records indicate a total of 1,624 trapping licenses were sold during the 2007-2008 trapping season. Of these, 1,586 were adult residential licenses, 15 were adult non-residential trapping licenses and 23 were youth residential licenses. These figures show a slight decrease in trapping licenses sold when compared to the previous season (1,690).

A total of 327,569 animals harvested (all species) was down 66,702 from the previous season's total of 394,271. The total value of the 2007-2008 fur harvest to the state's trappers was estimated at \$1,754,600.29. This total value was down \$248,451.66 from the previous season.

The nutria harvest (308,212) decreased by 67,471 from the previous season's total of 375,683. The average nutria pelt price paid to trappers during this past season was \$1.70. An additional \$5 was paid for all nutria taken during the Coastwide Nutria Control Program by registered participants.

### **Fur and Alligator Advisory Council (FAAC)**

During fiscal year 2007-2008, the FAAC continued to work towards its two major goals. The first goal of educating the public concerning the role of wildlife utilization in conservation is directly associated with the second goal of market enhancement for fur and alligator skins and products. FAAC has come to the increased realization that without education of the public to counter misleading animal rights propaganda, enhancement of markets cannot be accomplished in the long-term. The educational module paired with the educational CDs continued to be a great success. Requests for sample skins and programs have been tremendous. Staff and volunteers presented at numerous schools and libraries during fiscal year 2007-2008. The FAAC continued with a strong presence at large public events such as the Louisiana State Fair. Hundreds of school children visited the FAAC booth at the State Fair daily for its three-week duration. The Web site carried the educational story to a much broader audience of teachers and students. The success of our education program will likely determine the future of markets.

FAAC also concentrated on solving problems associated with alligators and crocodilians in general through Convention on International Trade (CITES) and USFWS programs and regulations. CITES Animals Committee met in Geneva, Switzerland April 18-22. This committee monitored a preliminary review of Mexico's Morelets crocodile down-listing proposal to Appendix II. There has been a considerable increase in *Caiman fuscus* from Colombia. The situation in Colombia needs to be urgently addressed by the Crocodile Specialist Group (CSG) and CITES and was a topic of discussion at the CSG Steering Committee meeting June 2 in Santa Cruz, Bolivia. Discussions regarding further standardization and expedition of trade in legal crocodilian products dominate these meetings. Progress continues to be steady.

FAAC has struggled to find new strong and stable markets for Louisiana fur. The international fur market continues to be very dynamic and many internal and external factors affecting buying trends and markets are still present. Mainland China still holds the brightest future for new and expanded markets and bought more Louisiana products this year. China is catching up with its knowledge base, and dealers are eager to learn about Louisiana furs. The FAAC attended fur shows in mainland China and Hong Kong during fiscal year 2007-2008. The

Beijing Fur Show is bigger every year and buyers are very interested in Louisiana products. Louisiana fur dealers were able to sell furs based on contacts made at this show. FAAC has followed a marketing plan of working in several countries that are gateways to China.

### **Research**

The Fur and Marsh Management Section continued research through grants and contracts during fiscal year 2007-2008. This section administered several continuing contracts concerning post-hurricane impacts to coastal marshes, vegetative damage caused by nutria and nutria control techniques.

LDWF personnel from the Rockefeller Refuge and the New Iberia Field Office worked with USGS, LDNR and LSU (Charles Sasser and Jenneke Visser) on conducting a "Coastwide Vegetative Data Collection" project. The purpose of this project was to collect vegetation data necessary to update the vegetation type map of coastal Louisiana, working cooperatively with LDWF. This cooperative work included the field collection of vegetative data by aerial surveys along pre-established North-South transect lines at stations located at 0.5 mile intervals, from the Gulf of Mexico to the northern interface of coastal marsh with freshwater wetland forest. During the summer and early fall of 2007 LDWF personnel worked with LSU (Charles Sasser and Jenneke Visser) to collect the vegetation data necessary to update the vegetation type map of coastal Louisiana. The survey duration was 39 days (248 hours) of helicopter flight time, starting on July 12, 2007 and ending on Oct. 5, 2007, covering the Louisiana coastal marshes from the boundaries with Texas to the west and Mississippi to the east. The vegetative data were collected from July-October 2007 from a helicopter. Flying established transect lines covering the Louisiana coastal marshes between the Texas state line to the west and the Mississippi state line to the east. The project work also included the transfer of vegetative data to digital files that were compiled by the National Wetland Research Center, USGS, in Lafayette, La., and working cooperatively with LDWF to interpret the vegetative data in order to determine marsh types of the coastal landscape that were incorporated into the finalized digital maps. This report and map can be found at this USGS website: <http://pubs.usgs.gov/of/2008/1224/>

LDWF conducted a fourth year of the Bobcat, Fox and Coyote Hunter Survey by taking a random sample (6 percent) of Louisiana big game license hunters from the 2006-2007 season. This information is used to estimate trends over time as to the number of bobcats within the state of Louisiana and the distribution of this species. This harvest data is needed to best manage the season.

LDWF continued fisheries research coupled with the impacts of beneficial dredge disposal on the habitat with ULL on the Atchafalaya Delta WMA. Floating Marsh Restoration research continued with LSU on selected freshwater marsh locations along the coast.

LDWF personnel continued work with the USDA/ Wildlife Services with funding from USFWS on develop-

ing and field testing lures and baits to increase trapping efficiency for the control of nutria. The field work continued during the 2007-2008 trapping season. The lure developed demonstrated some positive results in increasing the catch rate.

LDWF worked with The Association of Fish & Wildlife Agencies on the development of Best Management Practices for Trapping Mink and Nutria in the United States.

This section also monitors marsh conditions on the coastal WMAs and refuges. Marsh conditions are surveyed both on the ground and through aerial surveys. These surveys are indicators of general marsh health, abundance of aquatic vegetation for waterfowl, abundance of furbearers and many other important components of these ecosystems.

Fur and Marsh Management personnel also collected data on alligator nest densities and wading birds and shorebirds that nest and feed on these areas, and participated in intensive coast wide waterfowl surveys.

### Coastwide Nutria Control Program (CNCP)

The CNCP is funded by the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). The objective is to decrease the damage to coastal vegetation that is caused by nutria by increasing the incentive for harvest. During the 2007-2008 season, a total of 308,212 nutria tails, worth \$1,541,060 in incentive payments, were collected from 347 participants. One hundred and forty-one participants (41 percent) turned in less than 200 tails, 64 participants (20 percent) turned in 200-499 tails, 30 participants (8 percent) turned in 500-799 tails and 108 participants (31 percent) turned in 800 or more tails.

### Total number of nutria harvested by method of take in 2007-2008

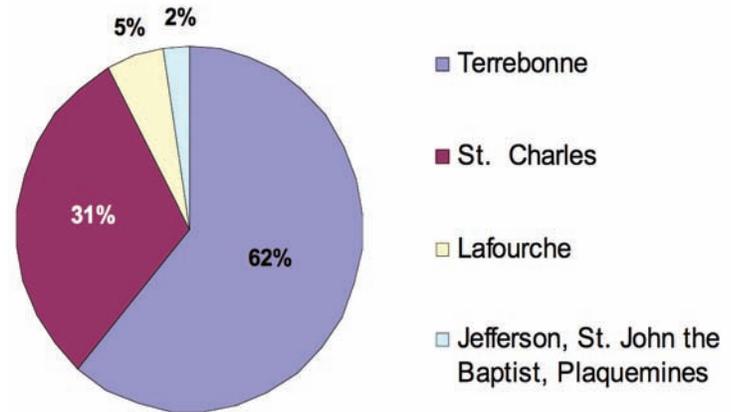
There were 21 parishes represented in the program with harvests ranging from 19 to 78,934 nutria per parish. Terrebonne Parish reported the highest number of tails with 78,934 followed by St. Martin and Plaquemines parishes with 54,726 and 41,072, respectively.

February was the most active month for harvesting nutria (101,824 tails) while November (12,910 tails) was the least active month (see CNCP 2007 Report, CWPPRA Project LA-03b).

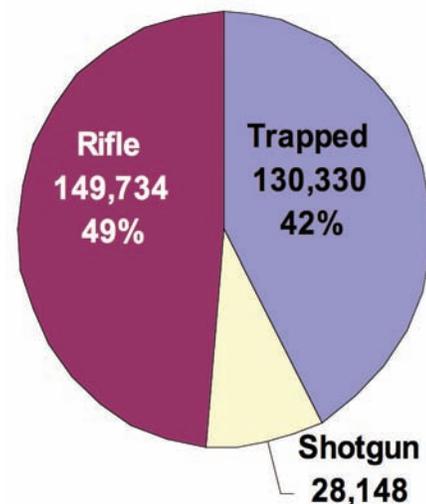
### Vegetative Damage Caused By Nutria

As a monitoring requirement of the CNCP, a coast-wide aerial survey was conducted in the spring of 2008 covering the coastal parishes of Louisiana. The total number of sites visited in 2008 was 33, of which five were new sites while 28 were previously classified as damaged in the 2007 survey.

## PERCENTAGE OF NUTRIA DAMAGED ACRES PER PARISH



## METHODS OF TAKE



## NUMBER OF NUTRIA-DAMAGED SITES & ACRES DAMAGED ALONG TRANSECTS BY PARISH IN COASTAL LOUISIANA, 2002-2008

PARISH	2002		2003		2004		2005		2006		2007		2008	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Terrebonne	41	12,951	34	12,521	27	7,679	14	7,340	18	4,541	12	5,915	12	3,768
Lafourche	8	1,222	7	610	5	381	0	0	2	127	2	328	2	338
Jefferson	17	3,003	10	1,805	9	1,718	5	874	7	1,383	3	177 <sup>3</sup>	2	69
Plaquemines	10	882	13	2,540	7	2,494	7	1,763	7	1,850	0	0	1	11
St. Charles	6	768	6	1,266	9	2,564	5	3,249	6	4,690	4	2,216	5 <sup>1</sup>	2,215 <sup>2</sup>
Cameron	0	0	0	0	0	0	1	233	0	0	1	167	0	0
St. Bernard	6	921	5	918	5	1,035	4	1,004	4	882	1	225 <sup>3</sup>	0	0
St. John	0	0	1	20	2	111	2	241	2	240	0	0	0	0
Iberia	0	0	0	0	0	0	0	0	1	158	0	0	0	0
St. Tammany	4	752	2	360	0	0	0	0	0	0	0	0	0	0
Orleans	2	686	2	962	0	0	0	0	0	0	0	0	0	0
St. Mary	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vermilion	0	0	4	886	5	924	1	76	2	389	0	0	0	0
Jefferson Davis	0	0	0	0	0	0	1	88	0	0	1	81	0	0
St. John the Baptist	0	0	0	0	0	0	0	0	0	0	1	135	1	70
<b>Total</b>	<b>94</b>	<b>21,185<sup>1</sup></b>	<b>84</b>	<b>21,888<sup>1</sup></b>	<b>69</b>	<b>16,906<sup>1</sup></b>	<b>40</b>	<b>14,868<sup>1,2</sup></b>	<b>49</b>	<b>14,260<sup>1</sup></b>	<b>25</b>	<b>9,244<sup>1,3</sup></b>	<b>23</b>	<b>6,471<sup>1,3</sup></b>

<sup>1</sup>This figure represents acres damaged along transects only. Actual damage coast wide is approximately 3.75 times larger than the area estimated by this survey.

<sup>2</sup>This figure includes 2,553 acres of marsh previously impacted by nutria that was likely converted to open water in Plaquemines and St. Bernard Parishes due to tidal scour from Hurricane Katrina.

<sup>3</sup>These figures include acres from sites that were partially converted to open water.

All five of the new sites were identified as nutria damaged.

There were no sites completely converted to open water, and seven sites that recovered in 2007.

Of the 26 damage sites visited in 2008, 22 were related to nutria damage, one was a combination of nutria/hog damage, one related to muskrat damage and two sites were impacted by storms.

The 2008 survey identified 23 sites (nutria and nutria/hog damage) with a total of 23,141 acres impacted by nutria feeding activity along transects. This is approximately a 31 percent decrease from the 34,665 damaged acres reported in 2007.

CNCP continues to be a successful means of controlling the nutria population with an average of nearly 300,000 animals harvested annually. Consequently, the number of nutria impacted acres in Louisiana's coastal marsh has also decreased significantly.

## MARSH MANAGEMENT

Division staff continued work on several CWPPRA projects and other restoration projects during this period. Staff worked with parish, state and federal government coordinating these projects through planning, meetings, site visits, permitting and project reviews.

Staff also worked on several CWPPRA projects involving coastal WMAs. Division staff attended meetings concerning design, modeling and permitting for Castille Pass, Atchafalaya Delta WMA, State Wildlife Refuge Terracing and Marsh Creation Project, East Marsh Island Marsh Creation and Nourishment, East Island - New Cut, Raccoon Island Back Bay Marsh Creation and Whiskey Island West Flank, which are CWPPRA projects. These projects continued with design, permit application, field trips and approval process. Construction of Phase A on the Raccoon Island CWPPRA project, eight additional rock breakwaters, began in February 2006 and was completed in August 2007. Planning and permit review continued for Phase B Raccoon Island Back-Bay Marsh Creation. The New Cut CWPPRA project is slated for completion in July 2008. Staff also worked on the planning of a Wine Island dredging project with LDNR and USACE, and was completed in the late summer of 2007.

Division staff continued to work closely with USACE on annual maintenance dredging of the Atchafalaya River through the Atchafalaya Delta WMA. Work continued on new potential dredge deposition sites on the lower Atchafalaya River. This required planning and review of specifications during the fall and monitoring of activities during the summer, which included shorebird surveys. Division staff worked with USACE on newly proposed dredge disposal sites and inspected the completion of Mistro Island disposal site (completed in November 2007) located on the west side of the navigational channel. Dredge spoil was also pumped on Donna Island in November 2007. Division staff worked with USACE on dredging of the Bar Channel Reach located on the

Atchafalaya Delta WMA with deposition on the Bird Island Site. LDWF worked with USACE on the Continuously Operating Reference Station installation at the Atchafalaya Delta WMA headquarters.

Division staff worked with USACE on the Cypress Lumber Canal Project which is associated with the Davis Pond CWPPRA project. This project is still in the planning and engineering phase and will add eight additional cuts to the Davis Pond Pool Area to facilitate drainage into Lake Cataouatche.

Fur and Marsh Management staff worked with LDNR on the Lake Sand CWPPRA project repairs. These repairs are a result of damages caused by Hurricane Rita to the project area located on Marsh Island.

The Fur and Marsh Management section is responsible for the data collection, management and maintenance of approximately 20 YSI continuous recorders in place across the south central and southwest coastal management and refuge areas. The model currently being used is the 600 LS sonde which measures and records water levels, temperature, specific conductance and salinity on an hourly basis. YSI units are currently located at:

- **State Wildlife Refuge (2)** - The YSI units located on State Wildlife Refuge are at Lake Tom and the Hell Hole.
- **Marsh Island (7)** - Marsh Island has seven interior marsh YSI stations locations at East Oyster Branch, Lake Long and Lucien Bayou, and in the Northeast and Southeast units, as well as the Belly Dam canal and Little Charles Bayou. Historically a unit has been in place on the east side of the island at Lake Sand, but has not been replaced since it was lost during Hurricane Rita.
- **Wax Lake (1)** - The YSI location on Wax Lake is near East Pass.
- **Atchafalaya Delta (1)** - The Atchafalaya Delta YSI is located on Log Island Pass.
- **Point Aux Chenes WMA (5)** - In 2007 three additional units were placed inside the Point Aux Chenes impoundment as part of the hydrological restoration project monitoring. The four units in the impoundment are evenly distributed throughout the 5,000-acre unit. One YSI unit is also located inside the Montegut impoundment.
- **Salvador WMA (3)** - The YSI units at Salvador WMA are located in the north end, the south west area near the WMA camp and in the Gulf Canal near Lake Cataouatche.

LDWF was awarded a grant from NAWCA to construct a Water Management Unit on the Pointe-aux-Chenes WMA. The 5,000-acre unit is located in the center of the WMA and will be managed to enhance a deteriorated salt marsh that is now 60 percent open water (in 1956 this same area was 99 percent marsh). The priority of the water management regime is to re-establish emergent vegetation in shallow areas, increase emergent species diversity, reduce turbidity and increase submerged aquatic. This will be accomplished through successful late winter-early spring draw-downs to expose shallow water

bottom and edge to stimulate vegetative growth. During maintenance years the objective will be to maintain water levels at marsh level and maintain salinities at or below 8 ppt. to enhance submerged aquatic vegetation production and species diversity of emergent vegetation. This project was completed in the spring of 2007. In April 2007 vandals burned one of the wing walls of the S-2 structure rendering it inoperable until repairs were made the following July.

In the summer of 2007, John Chance Land Surveys, Inc. was contracted to survey and install benchmarks and staff gages at each of the structures as well as survey elevations inside the impoundment to determine mean marsh level. Following delivery of the John Chance report, LDWF biologists determined that +0.5ft NAVD 88 elevation would be the target water level for marsh level during maintenance years and 0ft NAVD 88 would be used for future drawdown activities.

As noted above, during the summer of 2007, three additional continuous recorder stations were installed utilizing YSI 600LS sondes. There are three recorders inside the PAC Unit and one outside, as well as the existing station in the Montegut impoundment. Along with operating the water control structures, LDWF is responsible for pre/post biological and hydrological monitoring and reporting of the Pointe-Aux-Chenes impoundment. These monitoring and reporting activities include:

1. checking water levels and salinities at monitoring stations.
2. recording structure activities.
3. collecting six-foot otter trawl fisheries samples from April-September.
4. annually conducting ocular vegetation composition data.
5. conducting surveys of emergent vegetation colonization in permanent shallow water bottom sampling sites.
6. conducting annual aerial waterfowl surveys.
7. conducting hunter participation/harvest surveys.

A monitoring report is submitted annually documenting the management of the unit and all survey results.

LDWF is responsible for managing this unit for wintering waterfowl, shorebirds, wading birds and other coastal estuarine dependent species.

Staff worked with LDNR on the Coastwide Reference and Monitoring System in reviewing and issuing permits for the construction of monitoring sites on the coastal refuges and WMAs. Permits were also issued for access to these sites for data collection and servicing of the data collection units.

Staff also assisted other division personnel with planning and monitoring of oil and gas activity on the coastal refuges and WMAs.

Due to Hurricane Rita, many of the stoplogs for the water control structures on Marsh Island were lost. Coastal

Operations and Fur and Marsh management staff acquired and replaced stop logs for the water control structures for the Northeast, Southeast and Big Impoundment units. The water management regime will be aimed towards reducing salinities and tidal scour, maximizing emergent vegetation in shallow areas, increase emergent species diversity, reducing turbidity and increasing submerged aquatic vegetation for migratory birds.

## COASTAL STEWARDSHIP OPERATIONS

The Coastal Operations section includes all WMAs and refuges within LDWF's Coastal and Nongame Resources Division, with the exception of Rockefeller Refuge and White Lake Conservation Area. These areas include Atchafalaya Delta, Biloxi, Lake Boeuf, Pass-a-Loutre, Pointe-aux-Chenes, Salvador/Timken and Wisner WMAs, and Marsh Island, St. Tammany, State Wildlife and Isles Dernieres Barrier Islands refuges. The Coastal Operations 2006-2007 Annual Report included information on the continued involvement of personnel with hurricane recovery (2005), primarily with FEMA purchasing, rebuilding plans and activities. During fiscal year 2007-2008, purchasing and rebuilding from these storms continued.

The 2007 teal season harvest-success on the coastal WMAs was 1.4 teal harvested for every hunter effort. This harvest was slightly above the 2006 season of 1.3 ducks per hunter effort but less than the 2005 season (1.6 teal per hunter effort). In addition, hunter interviews during the 2007-2008 regular waterfowl season indicated that the average harvest-success on the coastal WMAs was 2.5 ducks per hunter, which was slightly higher than last season (2.3 ducks per hunter effort). However, harvest success (i.e., kill per effort) has decreased by approximately 11 percent since the 2001-2002 season. In conjunction with waterfowl hunter participation/harvest surveys, Coastal Operations staff continued a three-year monitoring project to collect waterfowl gizzards to identify and document what birds are consuming post-hurricanes as compared to years prior to these storms.

Coastal Operations staff continued with mottled duck banding during fiscal year 2007-2008 as part of LDWF's survival study being conducted by Rockefeller Refuge staff. Banding was conducted at Pass-a-Loutre, Pointe-aux-Chenes, Salvador and Atchafalaya Delta WMAs, and Marsh Island Refuge. The total number of mottled ducks banded during fiscal year 2007-2008 was 1,262. In addition, 30 wood ducks and one black-bellied whistling duck were banded by Coastal Operations staff at Salvador WMA.

Revised harvest agreements between LDWF and alligator hunters/fur trappers of the coastal WMAs and St. Tammany Refuge were created for the 2005-2006 season and continued to be utilized for the 2007 and 2008 seasons. Coastal WMA/refuge trappers were successful in harvesting 156 alligators from Atchafalaya Delta WMA, 384 from Pass-a-Loutre WMA, 280 from Pointe-aux-Chenes WMA, 512 from Salvador/Timken WMAs, 10 from St. Tammany Refuge and seven from Lake Boeuf WMA in 2007.

## 2008 TEAL SEASON SUMMARY

Wildlife Management Area	Estimated Ducks Harvested	Estimated Hunters	Actual Kill Per Hunter	Checks Performed	Actual Hunters Checks	Estimated Number of:					
						Coots	Gallinules	Mergansers	Rail	Snow/Blue Geese	Speckled Belly Geese
<b>Atchafalaya Delta</b>	<b>11,341</b>	<b>4,225</b>	<b>2.7</b>	<b>11</b>	<b>942</b>	<b>1,645</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>15</b>
Main Delta	1,690	745	2.3	11	214	45	0	0	0	0	10
Wax Lake Outlet Delta	9,651	3,480	2.8	11	728	1,600	0	0	0	40	5
<b>Pass-a-Loutre</b>	<b>1,123</b>	<b>340</b>	<b>3.3</b>	<b>11</b>	<b>223</b>	<b>115</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>45</b>	<b>0</b>
<b>Salvador</b>	<b>1,265</b>	<b>600</b>	<b>2.1</b>	<b>9</b>	<b>288</b>	<b>1,650</b>	<b>430</b>	<b>10</b>	<b>10</b>	<b>0</b>	<b>0</b>
Davis Ponding Area	568	210	2.7	9	158	370	135	5	5	0	0
Outside of Ponding Area	697	390	1.8	9	130	1,280	295	5	5	0	0
<b>Pointe-aux-Chenes</b>	<b>4,536</b>	<b>2,025</b>	<b>2.2</b>	<b>11</b>	<b>1,311</b>	<b>1,075</b>	<b>230</b>	<b>35</b>	<b>20</b>	<b>0</b>	<b>0</b>
Grand Bayou Unit	740	425	1.7	11	357	500	25	0	5	0	0
Montegut Unit	552	175	3.2	11	125	25	0	5	0	0	0
Pointe-aux-Chenes Unit	562	245	2.3	11	217	10	5	15	5	0	0
Un-managed Area	2,682	1,180	2.3	11	612	540	200	15	10	0	0
<b>Grand Total</b>	<b>18,265</b>	<b>7,190</b>	<b>2.5</b>		<b>2,764</b>	<b>4,485</b>	<b>660</b>	<b>55</b>	<b>30</b>	<b>85</b>	<b>15</b>

### NOTES:

1. Estimates are extrapolations of samples taken from selected launches, bayous/canals, and camping facilities known to be used by waterfowl hunters to access these WMAs.
2. Only kill per hunter effort is an exact reflection of samples taken. This data does not reflect participation/harvest for dates not sampled.
3. The PACWMA physically-challenged waterfowl blind was utilized three times this season and averaged 1.2 ducks per effort.

## 2007 TEAL SEASON SUMMARY

Wildlife Management Area	Estimated Ducks Harvested	Estimated Hunters	Actual Kill Per Hunter	Actual Hunters Checked	Sample Days	Estimated Number of:					
						Coots	Gallinules	Mergansers	Rail	Snow/Blue Geese	Speckled Belly Geese
<b>Atchafalaya Delta</b>	<b>1,520</b>	<b>1,160</b>	<b>1.3</b>	<b>376</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Main Delta	435	290	1.5	84							
Wax Lake Outlet Delta	1,085	870	1.2	292							
<b>Pass-a-Loutre</b>	<b>240</b>	<b>100</b>	<b>2.4</b>	<b>74</b>	<b>6</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Salvador</b>	<b>195</b>	<b>180</b>	<b>1.1</b>	<b>97</b>	<b>5</b>	<b>0</b>	<b>255</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Davis Ponding Area	65	80	0.8	64			55				
Outside of Ponding Area	130	100	1.3	33			200				
<b>Pointe-aux-Chenes</b>	<b>1,395</b>	<b>965</b>	<b>1.4</b>	<b>647</b>	<b>6</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>
Grand Bayou Unit	127	145	0.9	115			5		0		
Montegut Unit	336	110	3.1	97			0		0		
Pointe-aux-Chenes Unit	218	115	1.9	90			0		5		
Un-managed Area	714	595	1.2	345			10		0		
<b>Grand Total</b>	<b>3,350</b>	<b>2,405</b>	<b>1.4</b>	<b>1,194</b>		<b>0</b>	<b>270</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>

### Top Harvested Duck Species in Descending Order:

Atchafalaya Delta: B.W. Teal 100%

Pass-a-Loutre: B.W. Teal 100%

Salvador: B.W. Teal 100%

Point-aux-Chenes: B.W. Teal 95%; G.W. Teal 5%

### NOTES:

1. Estimates are extrapolations of samples taken from selected launches, bayous/canals and camping facilities known to be used by waterfowl hunters to access these WMAs.
2. These numbers reflect totals from six sampling dates only. This data does not reflect participation/harvest for dates not sampled. Only kill per hunter effort is an exact reflection of samples taken.
3. The PACWMA physically-challenged waterfowl blind was used twice and harvested one bird for an average of 0.17 bird per effort.

One of Coastal Operations staff biologist was involved with the Third Annual Eagle Expo in Morgan City. This festival involves guided boat tours as well as professional presentations on the bald eagle and wildlife of the Atchafalaya Basin and adjacent swamps.

Coastal Operations staff biologists were once again involved in the Louisiana Envirothon. The Louisiana Envirothon works in partnership with resource management professionals and the general public to promote and strengthen the goal of environmental education in the state. The Louisiana Envirothon is a multidisciplinary, environmental problem-solving competition for students in grades 6-12. Teams of five young people from the same school or associated with an organized group (i.e. FFA, 4-H, home-school groups, BSA pack) train and compete in five natural resource areas: soils; aquatic resources; forestry; wildlife; and a current environmental issue. There is also an oral presentation component of the competition, in which teams present a solution to an environmental problem related to the current issue. Throughout the competition, students learn hands-on in a real-life context the complexities of solving environmental problems while working as a team and having fun.



### **Atchafalaya Delta Wildlife Management Area (ADWMA)**

Coastal Operations staff continued to participate in the implementation and monitoring of USACE Dredge Material Management Program to beneficially use dredge material to create wetlands within the Atchafalaya Bay. During fiscal year 2007-2008, USACE dredged the bay channel and lower reach of the Atchafalaya River. Consequently, USACE used the dredge material from the lower reach of the river (a.k.a., Bar Channel) to expand the size of Donna Island. In addition, dredge material from the Bay Channel was used to construct a 700-foot island at the mouth of Log Island Pass. The island has been named "Mistrot Island" after Mr. Al Mistrot, a veteran USACE dredge inspector.

New Iberia staff met with Office of State Lands concerning the legal description of the ADWMA boundary. The meeting was held to address discrepancies on the Wax Lake Outlet and to obtain support from Office of State Lands to confront adjacent landowners about improper posting. An additional meeting was held with Belle Isle Hunting Club and Office of State Lands concerning the northeast property boundary of the Wax Lake Outlet Delta. Belle Isle is improperly posting the boundary and

claiming approximately 155 acres of the WMA. The managers of Belle Isle firmly believe they own the property. Thus, the dispute was not resolved.

Coastal Operations staff continued to provide logistical and technical support for multiple research projects that evaluated various wildlife and fishery aspects of ADWMA. Area staff provided logistical accommodations for Dr. Guerry Holm's (LSU Dept. of Oceanography and Coastal Sciences) research on delta growth, elevation change and vegetation community succession. Also, LDWF assisted with data collection for Dr. Lane Foil's (LSU entomology professor) research to determine if insect vectors of the bluetongue virus are present at the WMA. Area staff also assisted with the collection of river shrimp (*Macrobrachium ohione*) and plankton samples for Dr. Ray Bauer's (UL Lafayette biology professor) research to assess the seasonal variation in the population structure and migration of this species of shrimp, which inhabits the Atchafalaya River. Finally, Gary Peterson of the LSU Coastal Fisheries Institute continued his sport fish research at the Main and Wax Lake outlet deltas. LDWF staff assisted this effort by providing lodging and transportation when required.

Coastal Operations staff assisted with education/outreach at ADWMA. New Iberia and WMA staff provided logistical assistance for an Arkansas Tech University field trip to Wax Lake Outlet as part of a class excursion to Louisiana to get a first hand view of Louisiana's abundant natural resources. Dr. Andy Nyman of LSU Renewable Natural Resources coordinated and assisted with the trip.

Mike Carloss and Cassidy Lejeune attended the Jan. 10-11, 2008 Atchafalaya River Symposium in Baton Rouge. Mike presented information about trends in wildlife use of the WMA with emphasis on dredge material islands. The symposium was hosted by LSU and the Coalition to Restore Coastal Louisiana to provide information about ecosystem functions of the Atchafalaya River from the Old River Control Structure to the Continental Shelf.

In addition to supporting research, the Coastal Operations Section also assisted NOAA by providing airboat support to ground truth the accuracy of aerial photography vegetation surveys, which are being conducted to monitor vegetation changes within the vicinity of the Big Island Mining and Atchafalaya Sediment Delivery CWPPRA projects. These surveys are performed as part of the long term monitoring program for these projects. In addition, Coastal staff participated in an operations and maintenance inspection meeting with NOAA/NMFS and LDNR to discuss maintenance dredging for the Big Island Mining and Atchafalaya Sediment Delivery CWPPRA projects. LDNR has some funds (under \$800,000) allocated for dredging/beneficial use. However, additional funds will be required from CWPPRA to return the projects to desired specifications.

Coastal staff assisted the LDWF Mineral and Permit Section with multiple assessments of proposed well sites

on the WMA. The assessments were conducted to identify potential impacts of the oil and/or gas exploration to wetlands and hydrology in the vicinity of the sites. Also, Coastal staff assisted with environmental monitoring associated with three oil spills on, or in the close vicinity of, the WMA:

- A Harvest Oil and Gas LLC gas well on the south-west side of the Main Delta began leaking due to a casing failure approximately 13,000 feet under the mud line. Approximately 200-300 barrels of oil escaped containment. However, minimal environmental impacts (wetlands, wildlife, etc.) were reported. Harvest Oil plugged and abandoned the well as soon as possible.
- A Dembury/Hilcorp well began leaking in the vicinity of the Restricted Area. The valves on the well were not sealing and thus allowed oil to drip into the water surrounding the well. Containment boom and sorbent pads were deployed to contain the condensate that escaped from the valves. Hilcorp plugged and abandoned the well in April 2008.
- A Phoenix Exploration Co. drilling rig blow-out occurred on Belle Isle Hunting Club which borders the Wax Lake Outlet Delta. Fortunately, the well "sanded in" within a few days and had a minimal impact on the WMA. The well spewed condensate, but little if any landed within the boundary of the Wax Lake Outlet Delta.

Permits for most all available mooring locations were issued for the 2007-2008 hunting seasons. A total of 68 houseboat-mooring permits were issued at the three mooring locations on the WMA. Thirty-two permits were issued for the Main Delta and 36 for the Wax Lake Outlet Delta.

Based on self-clearing permits and mandatory deer inspection data, 630 archery hunter efforts were expended in the harvest of 123 deer (78 bucks and 45 does), yielding a kill per effort of one deer per 5.1 efforts. This is an increase in harvest from the 2006-2007 archery season. Seventy-three deer were harvested in 2006-2007.

Two youth lottery deer hunts were held at Big Island on the Main Delta during October 2007. A total of 28 youth hunters (56 efforts) participated in the lottery deer hunts that were held Oct. 13-14 and 27-28, 2007. Over the four days of hunting, a total of nine deer (seven does and two bucks) were harvested from Big Island. This equates to one deer harvested for every six efforts. In anticipation of the hunt, area staff widened and bush-hogged rights-of-way and posted the boundaries of the designated areas. Logistical accommodations and deer stands were not provided for the 2007 youth hunts.

WMA staff planted three food plots in the Restricted Area to provide a supplemental food source for deer during the fall/winter months. The ADWMA crew also maintained the rights-of-way and added additional boundary posts along the perimeter of the Restricted Area. Area staff re-posted the boundary of the WMA during fiscal year 2007-2008. The boundary was posted using GIS/GPS

computer software to improve accuracy of the posting. The 2007 teal season harvest success at ADWMA was 1.3 birds per hunter effort. This is 35 percent lower than the 2006 average and 13 percent lower than the 2005 average. In addition, waterfowl hunter/harvest surveys revealed that harvest success for the regular waterfowl season was 2.7 birds per effort. This is a 17 percent increase from the 2006-2007 season and a 42 percent increase from the 2005-2006 season.

WMA and New Iberia staff continued with mottled duck banding during fiscal year 2007-2008 as part of LDWF's survival study being conducted by Rockefeller Refuge staff. Staff banded 111 ducks.

Coastal staff noted an increase in the use of surface drive motors during the past few hunting seasons. Also, production of higher horsepower surface drive motors has been a trend in the industry. Thus, a 36 hp restriction was implemented on ADWMA for air-cooled surface drive motors and mudboats in an effort to minimize marsh impacts and reduce access to interior marsh via boats that utilize these engines.

Coastal Operations staff and Michael Seymour of the Habitat Section conducted plover surveys as part of the 2008 statewide coastal winter plover surveys. Multiple semi-palmated, black-bellied and piping plovers were observed during the surveys.

During the 2007 alligator season, 156 alligators (averaging 7.4 feet) were harvested from ADWMA. LDWF received \$17,498.66 for its 40 percent share of revenue generated from the harvest. One of the trappers did not fill his 79 tags because he was written a citation for illegally harvesting alligators from state lands. All of his tags were confiscated by the LDWF Enforcement Division.

According to user surveys, approximately 32,425 recreational users visited the WMA during fiscal year 2007-2008.

#### **Biloxi Wildlife Management Area**

The 2007 teal season was reported to be good to excellent. The regular waterfowl season on this area was reported to be fair to poor with most hunters harvesting green-winged teal, gadwall and shovelers.

#### **Isle Dernieres Barrier Island Refuge**

Many CWPPRA meetings and field trips were attended by Coastal Operations personnel involving New Cut Dune and Marsh Restoration (TE-37), Raccoon Island Shoreline Protection/Marsh Creation (TE-48) and Whiskey Back Barrier Marsh Creation (TE-50) CWPPRA projects. New Cut project began building dune and back barrier marsh in early 2007 in the cut formed several years ago between Trinity Island and East Island. It also included vegetative plantings and sand fencing. The project was completed in August 2007. Raccoon Island Shoreline protection (Phase A) began in 2006 and included creating an additional eight breakwaters and an eastern terminal groin. The project was completed in August

2007. The marsh creation component is planned for construction in 2009. Whiskey Back Barrier was approved for Phase 2 funding in 2007 and is planned for construction in 2009. Staff also worked on the construction of a Wine Island dredging project with LDNR and USACE which was completed in August 2007.

Several CWPPRA project proposals were introduced at the CWPPRA Regional Planning Teams meeting in Morgan City in January 2007 but none of them were selected for Phase 1 funding.

In 2006, Fur and Refuge staff secured a \$200,000 grant from USFWS to contract with University of Louisiana on a brown pelican research project. The project will:

- determine the effects of tropical storms and hurricanes on brown pelican productivity from 1968-2008.
- translocate brown pelicans from Raccoon Island to a suitable nesting colony site at Isles Dernieres, Timbalier or East Timbalier Islands.
- evaluate habitat conditions and nesting site preference at the new colony or colonies.
- band brown pelicans at Raccoon Island to determine movement and survival.
- collect blood samples to monitor the presence of contaminants within the brown pelican population.

Field work on this project began in May 2007 and continued through the summer and into the spring and summer of 2008.

A barrier islands workshop was held in November 2007 in New Orleans and attended by Coastal Ops. biologists.

Winter plover surveys were conducted by staff in February 2008 with numerous plovers of several species documented as well as many other shorebirds.

A State Wildlife Grant project addressing nesting colonial seabirds began on Isle of Dernieres Barrier Island Refuge in March 2007 with LSU and Nicholls State. Assistance was given to researchers in the way of supplies, expertise, etc.

Coastal Operations staff issued Impossible Pictures, Ltd. of London, England a permit to access East Island of Isle Dernieres (in the vicinity of New Cut Dune and Marsh Restoration Project). Impossible Pictures was permitted to film portions of the island for the Discovery program, which filmed a mangrove propogule planting project at New Cut in January.

#### **Lake Boeuf Wildlife Management Area**

According to self-clearing permits, 13 attempts were made to harvest deer and hogs in fiscal year 2007-2008 and were unsuccessful. The youth hunting stands were still in place, but due to manpower constraints the youth hunts were cancelled.

Lake Boeuf staff visited the area on several occasions for grass cutting on the ridge, etc. The boundary along Theriot Canal (east boundary), Halphen Canal and Foret

Canal (western boundary) was posted.

A new trapper was selected for the area (Dwight Naquin) and he is currently the sole trapper for this area.

An airboat permit was issued for pipeline survey by Exxon Mobile.

Chris Reid, LDWF botanist, performed a vegetative survey of the area.

#### **Marsh Island Refuge**

Coastal Operations staff continued to provide technical and logistical assistance for the East Marsh Island Marsh Creation CWPPRA project. Several interagency meetings were held to discuss/develop the project and Coastal staff assisted with finalizing some of the project details such as desired marsh elevation. Also, LDNR contractors conducted a geophysical survey, bathymetry data collection, magnetometer surveys, etc. as part of the engineering and design phase of the project. This project is scheduled to compete for Phase 2 funding in 2009.

Coastal staff provided logistical assistance for an LDNR operations and maintenance inspection of the Marsh Island Hydrologic Restoration CWPPRA project. The inspection revealed a new wash-out around one of the plugs on the east end of the project. LDNR and USACE plan to use operations and maintenance funds to repair several features of the project in 2009.

Coastal Operations staff consulted with USFWS concerning management issues for the Shell Keys National Wildlife Refuge. Also, LDWF personnel assisted with the development of a comprehensive management plan for the refuge.



Coastal Operations assisted Minerals Management personnel with assessments of proposed oil and gas infrastructure on the refuge. The assessments were conducted to identify potential impacts of the exploration to wetlands and hydrology in the vicinity of the sites. LDWF coordinated with Vermilion Bay Exploration and Renaissance Petroleum concerning drilling in the vicinity of Lake Michael, Bird Island Bayou, Oyster Lake and Bayou Hawkins.

In May 2008, LDWF staff met with Richard House and other representatives from the Russell Sage Foundation to discuss oil/gas activities, hurricane cleanup/repairs and alligator issues at Marsh Island Refuge. The meeting was held at the New Iberia Office and presentations were provided by LDWF personnel. Subsequently, the Russell Sage Foundation representatives were transported to Marsh Island for a quick tour of the headquarters and the island.

New Iberia staff provided logistical assistance for a field trip with Dr. Sammy King, Dr. Andy Nyman and Sung-Ryong Kang "Jackie" (Ph.D. student) of the LSU Renewable Natural Resources. The trip was held to give Jackie an overview/tour of island to prepare him for his forthcoming whooping crane habitat evaluation research.

Coastal Operations staff provided logistical assistance for an LSU Coastal Restoration and Enhancement through Science and Technology project. The goal of the project is to investigate the chemical composition of *Spartina patens* (wire grass) to index nutrient, flooding and salinity stress and develop a tool to map coastal wetlands affected and unaffected by freshwater introductions. The research is being conducted by Dr. Andy Nyman and Vanessa Tobias of the LSU Renewable Natural Resources Department.

In addition, area and New Iberia staff assisted students of the LSU Department of Renewable Resources with the collection of mottled duck hens for a radio telemetry project. Thirty hens were captured on the southeast side of Marsh Island and radio transmitters were surgically implanted in the abdomen of the ducks. The objective of the study is to measure survival, habitat use and movement. Additional transmitters were implanted in mottled duck hens at Rockefeller and in southeast Texas.

A permit was issued to USGS to access Marsh Island and stay overnight at the headquarters facility. The permit was for USGS to conduct field work associated with a pilot study to develop a strategy for determining environmental conditions of coastal wetlands in the Gulf of Mexico region (TX, LA, MS, AL and FL).

Marsh Island staff also provided logistical assistance for data collection associated with Dr. Susan Mopper's research on iris populations at Marsh Island Refuge. A reconnaissance was held in April to census existing populations to determine if the irises are flowering and collect salinity data.

Controlled burning of approximately 4,440 acres of the island was conducted to increase the production of preferred food plants which are forage for the thousands of geese that utilize the area each winter. Maximum numbers of snow geese were approximately 14,000, many of which were observed foraging in the burned areas during LDWF's 2007 aerial surveys. Burning was conducted in the vicinity of Lake Michael, Little Charles Bayou, Bayou Lucien, Bayou Blanc, Oyster Lake, Lake Ferme and Bird Island Bayou.

WMA and New Iberia staff continued with mottled duck banding during fiscal year 2007-2008 as part of LDWF's survival study being conducted by Rockefeller Refuge staff. During fiscal year 2007-2008, 441 ducks were banded at Marsh Island Refuge.

The two shorebird/colonial water bird nesting islands in Bayou Platte were burned and sprayed with herbicide in March 2008 in preparation for the nesting season. The removal of vegetation from the islands exposes the shell/limestone surface, which provides ideal nesting habitat for nesting colonies. A variety of species are routinely observed utilizing the island, including black-necked stilts (*Himantopus mexicanus*), black skimmers (*Rynchops niger*), gull-billed terns (*Sterna nilotica*), least terns (*Sterna antillarum*), laughing gulls (*Larus atricilla*) and killdeer (*Charadrius vociferus*).

In addition to periodic bird monitoring, Coastal Operations staff conducted a survey of the refuge and as part of the 2008 coast-wide winter plover surveys. None of the target species of plovers were observed during the assessment. However, several long-billed curlews and many peregrine falcons were documented during the surveys.

New Iberia staff continued the process of returning the water management units to a functional state. Stop logs lost during Hurricane Rita were replaced, and Marsh Island salvaged stop logs from inoperable structures in an effort to continue water level manipulation. In addition, Gill Broussard and the tug boat crew repaired breaches in the Northeast Unit. In April 2008, the flap gates on the Southeast Unit were closed to initiate a draw down of the unit.

Approximately 6,870 oyster grass (*Spartina alterniflora*) plugs were planted on the southeast side of Marsh Island as part of an LDAF/Natural Resources Conservation Service (NRCS) planting project. The project was part of the LDAF Coastal Wetland Re-vegetation Program. Approximately six acres were enhanced as a result of the project. LDWF personnel provided logistical assistance for the endeavor.

New Iberia staff provided transportation to Marsh Island for Mr. Wayne Mouton, Erath High School agriculture teacher, and several students, to plant 125 live oak and 250 sugarberry seedlings. The trees were planted on the beach of Marsh Island approximately two miles SE of Lighthouse Point.

New Iberia staff provided logistical assistance for a Nicholls State University field trip to the refuge. The excursion was part of an upper level wetland ornithology course taught by Dr. Aaron Pierce. Coastal staff gave a presentation about management activities and provided a guided tour of portions of the refuge.

The Marsh Island crewboat, the *M.O. Sage*, was inspected by Kevin Martin of Author H. Terry & Co. Surveyors and Appraisers to determine what modifications were needed to re-power the vessel with new engines. However, a thorough examination of the vessel revealed that the hull had corrosion and electrolysis damage. An estimate of \$165,862 was received from Aluma Marine (shipyard/boat manufacturer) to conduct the repairs. As a result, Coastal staff obtained approval to replace the boat with a 36-foot pilothouse deck boat that would be powered by outboard engines. The new boat is estimated to cost approximately \$200,000. The *M.O. Sage* was sold to Gray Marine via Louisiana Property Assistance Agency auction for \$22,500.

Coastal Operations staff continued with the maintenance of the headquarters facility and weirs on the refuge. Coastal staff performed routine maintenance of the headquarters (cut grass, serviced equipment, performed minor repairs to buildings and equipment, painted the interior of the camp, etc.). Coastal staff also added boundary signs, replaced regulation signs at the weirs, fixed and replaced loose boards on the walkways of the Gordy Dam and Belly Dam and cleaned up trash and sprayed herbicide at the weirs on a routine basis.

Also, Coastal staff assisted with resolving issues involving the acquisition of three airboats for the Coastal and Nongame Resources Division (One each for Rockefeller, Marsh Island and New Iberia). The bid was awarded to Pathmaker Airboat, Inc., but a notice of cancellation was submitted by Office of State Purchasing following Pathmaker Airboat's failure to comply with LDWF's specifications. Consequently, New Iberia staff had to compile documentation and email correspondence to support the cancellation. The decision was appealed by Pathmaker, but Division of Administration ruled in favor of Office of State Purchasing/LDWF for the cancellation of the contract. Subsequently, Mark's Airboats was awarded the bid and the boats were completed in March 2008.

Area staff continued to assist with search and rescue at (and in the vicinity of) Marsh Island Refuge. The rescues were typically to assist with stranded boats and engine malfunctions.

According to user surveys, approximately 23,315 recreational users visited Marsh Island Refuge during fiscal year 2007-2008.

### **Pass-a-Loutre Wildlife Management Area**

As stated in the 2005-2006 Annual Report, following Hurricane Katrina the facilities at Pass-a-Loutre experienced severe damage. FEMA continued with plans to rebuild the headquarters and other facilities, visited the

site, met with staff on several occasions, held a pre-bid and pre-construction meeting and began the demolition and new construction of the facilities in April 2008. Completion of all construction is expected during the summer of 2009. A temporary HQ facility was transported via barge to be used as the area headquarters during construction of the new facilities.

Since Hurricane Ivan in 2004 and Katrina in 2005, oil spills continue to be a chronic problem on the area. During fiscal year 2007-2008, staff responded to approximately nine spills, most a small amount, across the WMA. One spill originated immediately after Katrina and is still releasing product. This spill is adjacent to Dennis Pass, and has been labeled as the "Mystery Spill" because a responsible party has not yet been identified. Meetings were held with Shell representatives in July 2007 which identified a potential production pit in the area. USCG met with their attorneys to decide a course of action. In March 2008 a meeting was held with the USCG. A federal fund had been opened in the amount of \$100,000 to hire Charlie Henry with NOAA to assimilate all information and make a determination on a responsible party. An RP was designated to clean the site. Area staff spent a great deal of time in assessing and monitoring these spills as well as recommending remediation.

Oil and gas operations are continuing to increase in the aftermath of the 2005 storms. Dune Oil has begun dredging several future well locations in preparation for increased drilling operations. Other companies such as Forest Oil, Apache, Chevron and others have also been active on the WMA. Area staff, as well as the Minerals Management Section, continually meet with oil and gas companies on prospective best use practices and least impact approaches and monitor all work activities. Dune Oil initiated a 16 well P&A project.

USACE conducted a South Pass Dredge Project with disposal in East Bay as well as in the north cell of the old freshwater reservoir. This project encountered many problems. The contractor closed off Cadro Pass when a containment levee failed, and later was found to be stacking the disposal material eight feet higher than the target elevation of +3.5 MLG. Cadro Pass was soon dredged out to pre-project conditions, and negotiations between LDWF and USACE continue concerning the elevation issues. Vegetative planting and supplying steel sheet piles were



part of the compensation plan that was completed in early 2008. Construction of a crevasse is also planned as part of this compensation work for 2009.

LDWF has stated concerns to LDNR concerning the impacts of the USACE hopper dredging and disposal program into Pass-a-Loutre. Several meetings were held during 2007-2008 with all pertinent state and federal agencies to discuss this issue and attempt to resolve the problems associated with the current process. The impacts that were described included shoaling of the entire pass leading to severe marsh losses down stream of Head of Passes. LDNR responded by halting all disposal of dredge material into the pass until the impacts were investigated and a new consistency determination is made. Since that time LDNR has issued USACE a permit to dispose into Pass-a-Loutre on a limited basis until the investigations are completed. LDNR had issued the USACE New Orleans District a temporary permit to allow them to continue disposing hopper dredge materials into Pass-a-Loutre through May 31, 2008. The investigation of impacts to the pass and the adjacent marsh continues, and meetings are planned for February 2009 to formulate a committee to discuss these issues and provide alternative measures to reduce impacts and utilize this process in a more beneficial way. USACE has also been tasked with comparing expenses of their current operation with a beneficial use of the materials utilizing "hopper pump-outs."

Coastal stewardship staff attended various CWPPRA meetings concerning the proposed Pass-a-Loutre Dredge Project. The project is being sponsored by USACE and USFWS. The project was proposed to project list 17 and failed but was reintroduced in January 2007 to project list 18 and made it into the top 10 projects. Final voting for Phase 1 funding was planned for December 2008. This project would involve dredging Pass-a-Loutre from Head of Passes to SE Pass, marsh creation with dredge material as well as constructing crevasses off of Pass a Loutre. A meeting was held with NOAA Fisheries and LDNR to review the 2005 Delta Wide Crevasse CWPPRA project. All crevasses were in good shape except for Baptiste Collette and South Pass, which needed maintenance dredging.

Ten vegetation transects were established during fiscal year 2007-2008 to help establish vegetative information across the WMA and annual changes. Chris Reid and Beau Gregory with the Louisiana Natural Heritage Program visited the area to survey area vegetation.

The deer tagging project continued in fiscal year 2007-2008. The goals of the project are to better understand deer habits in a freshwater marsh and to compare tooth wear and replacement patterns on age-known wild deer to the Servinghouse method. Ten were tagged using airboats at night.

The mottled duck nesting project continued. Twelve nest rolls were set out and one successful nesting was observed. This was the first recorded successful use of an

artificial nesting habitat by a mottled duck in Louisiana. Also, banding efforts resulted in 101 mottled ducks and four black-bellied whistling ducks banded in the 2007 banding season.

The 2007 teal season harvest success at the Pass-a-Loutre WMA was 2.4 birds per hunter which was up from 1.3 birds per hunter effort in 2006. In addition, waterfowl hunter/harvest surveys revealed that harvest success for the regular waterfowl season was 3.3 birds per effort which was slightly higher than 3.2 per effort in 2006. This is a significant increase from the 2005-2006 season of 1.7 birds per effort and is undoubtedly due to the improving conditions post-hurricane.

Based on self-clearing permit and mandatory deer inspection data, 22 harvest attempts were expended in the harvest of five deer, yielding a kill per effort of one deer per 4.4 efforts. This low harvest is likely due to less compliance from hunters which may be due to lack of personnel on site for half of the season. Hog hunters harvested five hogs for 20 efforts for one hog per four efforts.

Pass-a-Loutre WMA trappers harvested 384 alligators at an average length of 7.1 feet and an average price of \$35.61 for the 2007 alligator season. LDWF received \$39,137.99 for the 40 percent share of the revenues from the harvest.

According to user surveys, approximately 25,175 recreational users visited the WMA during fiscal year 2007-2008.

Several food plots were established



#### **Pointe-aux-Chenes Wildlife Management Area (PAC)**

As discussed in the 2005-2006 Annual Report, Pointe-aux-Chenes WMA experienced Hurricane Katrina and Rita damage to facilities, equipment, levees and habitat. Much of the work done by the small staff during fiscal year 2006-2007, continuing into 2007-2008, was related to continued clean-up and repair of these items. Some of this work included leveling the headquarters road, cleaning storm debris from a portion of the Grand Bayou levee system and the campground and repairs and cleaning the boat launches and parking lots. Other routine maintenance projects included installation of a large pipe gate

on the Jean Charles Ridge Levee, clearing fire breaks and roads on Point Farm, preparing and planting the dove field (sorghum, sunflower, brown-top millet and Japanese millet) as well as planting cypress and oak, cleaning the PAC/DU (Ducks Unlimited) and Grand Bayou water control structures and boat launches and a large ditch cleaning/reconstruction project to restore drainage to Point Farm. Terrebonne Parish began levee repairs to the low areas on their levees within the WMA. Terrebonne parish planted 167 trees on Point Farm as mitigation. Cypress and oak trees were planted at the campground, headquarters, dove field and Grand Bayou boat launch.

Several repairs were made to the PAC/DU S2 water control structures in fiscal year 2007-2008, including damage caused by vandals setting fire to the structure. Damage to the structure was repaired in August 2007 as well as additional rock placed to prevent future washouts. Other vandalism to various structures occurred as well during 2007-2008. The PAC staff has dressed the entire management levee system on Grand Bayou #1, repaired the water control structure on St. Louis Canal and installed a small bridge across the water control structure. The construction of the J1 section of the Morganza to the Gulf levee continued and was completed in May 2008. Terrebonne Parish stockpiled and placed dirt at Point Farm for maintenance and repairs to the parish levee. Water control structures were maintained several times. It has been noticed that vandals are tampering with most water control structures on all the impoundments on the WMA. This problem is making management of the impoundments impossible. Damages were noted in the water control structure on Grand Bayou #1 by the boat shed. Area staff has been making repairs and have sent up a request to purchase additional materials to make the repairs.

The Montegut Levee developed a significant breach where the DNR sheet piles meet the levee dirt. This is less than one year after the sheet piles were installed in this area. FEMA, LDNR and Terrebonne Parish visited the site to develop plans to repair the levee. LDNR compiled a plan and submitting it for funding through their agency.

A meeting was held at the Island Road structure of the PAC/DU impoundment with LDWF, Ducks Unlimited and T. Baker Smith to discuss needed repairs to the Island Road structure. This structure is in danger of collapsing due to undermining. T. Baker Smith is to develop a repair strategy and a cost estimate to deliver to Terrebonne Parish, LDWF and Ducks Unlimited. Once the estimate is received, another meeting will be held to discuss how to fund the repairs.

Meetings were held with Kell McInnis with the Wildlife Foundation and Jerry Holden with Ducks Unlimited to discuss the refurbishment of the Grand Bayou #1 levee system and enhancement by adding additional water control structures. Repairs are estimated at \$1.4 million. Ducks Unlimited is in the process of getting a NAWCA grant and finding match monies. At the March meeting of

the Wildlife Foundation, Ducks Unlimited intends to formally request \$100,000 from the foundation for the project.

Oil and gas operations kept staff involved with planning and monitoring of related work. Companies such as Baby Oil, Tellus Oil, Chevron and Gulf South Pipeline met with PAC staff on issues such as repairs to an existing flow line, work-over rig on Point Farm, pipeline repair, marking and maintenance. As expected with oil and gas operations, spills and other related issues occurred. Some problems included Baby Oil's facility on the WMA and Tellus Oil. Often spills require staff time for meetings, such as in this instance where a meeting was held at the site and attended by the Louisiana Oil Spill Coordinator's Office, LDEQ, LDWF and the Office of Conservation. The Bully Camp Seismic Project was initiated and completed on the WMA during fiscal year 2007-2008.

Tellus Oil removed the limestone from the abandoned well site and repaired Point Farm Road and their well access roads. A plan was agreed upon for mediating the site. The site will become a food plot, and Tellus has agreed to pay for soil preparation, bush-hogging, plowing, fertilizer and seed. These preparations will be made in the coming months.

Permanent vegetative monitoring sites have been established in the PAC water management unit as required by the operational permit. Vegetation transect were sampled this year.

Two birding towers were planned and funded by the Barataria Terrebonne National Estuary Project during 2006-2007. In 2008, a pre-bid meeting was held as well as a pre-construction meeting, and the towers were constructed in the summer of 2008.

A CWPPRA project proposal was put together and presented to Terrebonne Parish government officials for comment and presented at the CWPPRA Regional Planning Teams meeting. The project was a diversion off Bayou Terrebonne into Pointe aux Chenes and Montegut impoundments.

Area staff attended a meeting with Ronnie Paille on a potential diversion project off the Intracoastal Waterway into Grand Bayou. This project has potential to enhance the marsh on much of the eastern half of the WMA



Area staff spent a significant amount of time preparing the dove fields for the first split of 2007 dove season. The first split of the dove season proved to be a huge success. During the opening weekend the dove field entertained 76 hunters, including two handicap hunters and their assistants. During opening day, hunters averaged 7.2 birds per hunter. This was the best success for all state public fields. Two handicap hunters and their assistants harvested limits as well. During all bag checks performed, hunter success was in excess of two birds per hunter. Fifty mourning doves were banded in 2007-2008.

Construction of a small ring levee in the dove field was initiated this month. This will take a low portion of the field and convert it into a small duck hole which could be utilized by handicap hunters or youth in the future.

Mottled duck banding resulted in 608 ducks banded for the 2007-2008 banding season.

The 2007 teal season had a slightly higher success rate than in 2006 with hunters averaging 1.4 teal per hunter attempt. Success rate for the 2006 season was 1.3 teal per hunter. The regular duck season was lower this year than in 2006-2007, where hunters averaged 2.2 ducks per hunter compared with 2.4 ducks per hunter the prior season.

The deer season youth hunt resulted in 34 hunter attempts which yielded one harvested deer and one hog. The deer season resulted in 55 hunter attempts which yielded no deer. Apparently, self clearing permits are not being properly utilized as no deer were reported harvested.

During the 2007 alligator season, 280 alligators having an average length of 6.9 feet were harvested from the area. The trappers received approximately \$32.35 per foot for the sale of the alligators. LDWF received \$24,950.01 for the 40 percent share of the revenue from the harvest.

According to user surveys, approximately 43,225 recreational users visited the WMA during fiscal year 2007-2008.

### **Salvador/Timken Wildlife Management Areas**

This area continues to remain un-staffed, and staff from Pass-a-Loutre maintains the area on a routine basis. In addition to routine maintenance of facilities and grounds, the old manager's residence has been cleaned and repaired and is now able to be used as an overnight facility for staff.

Area staff continues to work with local oil and gas companies and Minerals Management staff with permitting, pipeline work, etc. Several oil spills occurred on the area during fiscal year 2007-2008, and area staff were involved in coordination of cleanup and mitigation.

Water hyacinth (*Eichhornia crassipes*) continues to be a problem on the WMA since the opening of the Davis Pond Diversion. The aquatic weed control section has been working on the area to aid in minimizing the problems.

The Davis Pond Diversion has operated much more this year due to higher river stages. Approximately two-thirds of Lake Cataouatche were filled with dense submerged aquatics. This is the highest extent of vegetation found in the lake in recent history. The dominant vegetation is hydrilla, but a wide diversity can be found. This was to facilitate improved drainage of the ponding area of the Davis Pond Diversion Project. The contract to repair and replace PVC sheet piling along the West Guide Levee of the Davis Pond Diversion Project was awarded and completed. LDNR and USACE met concerning adding additional cuts to the ponding area in the Cypress Lumber Canal Levee. LDWF submitted ideas for additional cuts including the hydrologic restoration of the Bois Piquante Oak Ridge Bayou and met on several occasions to discuss.

FEMA, along with Risk Management and an architect, visited the WMA with LDWF personnel to continue work on the claim on the facilities from Hurricane Katrina damage.

Hunters during the 2007 teal season experienced an average success rate of 1.1 teal per hunter effort. This success rate is down from the 2006 season success of 1.5 teal per hunter effort. During the 2007-2008 duck season, hunters increased their success rate to 2.1 ducks per hunter. This is slightly up from two ducks per hunter the previous season.

A total of one mottled duck and 30 wood ducks were banded on Salvador WMA during 2007-08. Deer hunters expended 38 hunting attempts this year harvesting no deer. Apparently, self clearing permits are not being properly utilized as no deer were reported harvested.

During the 2007 alligator season, 512 alligators having an average length of 6.8 feet were harvested from the area. The trappers received approximately \$32.02 per foot for the sale of the alligators. LDWF received \$44,868.94 as its 40 percent share of the revenue from the harvest.



According to user surveys, approximately 58,825 recreational users visited the WMA during fiscal year 2007-2008.

### **St. Tammany Wildlife Refuge**

This area continues to be managed by USFWS along with Big Branch Refuge.

Goose Point/Pointe Platte CWPPRA marsh creation project (PO-33) is scheduled for construction in late 2008 which is on a portion of St. Tammany Refuge.

Ten alligators having an average length of 7.3 feet were harvested from the area during the 2007 alligator season. Francis Monticheck, the area trapper, received approximately \$35.53 per foot for the sale of the alligators. LDWF received \$1,036.32 as its 40 percent share of the revenue from the harvest.

### **State Wildlife Refuge**

In 2007, SLEMCO caused some marsh damage while replacing the electrical service that provides electricity to the State Wildlife Refuge. The damage was caused by a marsh buggy equipped with a boring unit and plow and was within the vicinity of their right-of-way for the electrical service. Due to the stability of the marsh at State Wildlife, most of the tracks were only cosmetic and will probably be undetectable after one or two growing seasons. For a majority of the disturbance, the vegetation was simply matted down and the soil was only minimally disturbed. However, there were a few areas (primarily where the buggy crossed a bayou) that were compacted enough to hold standing water. Coastal staff met with SLEMCO on multiple occasions concerning their activity on the refuge and conducted follow-up inspections of the marsh damage. However, SLEMCO successfully restored shore power to the headquarters facility at no cost to the LDWF.

Coastal Operations staff continued with the maintenance of the headquarters facility. On average, Coastal staff made two or three trips to the refuge each month. The headquarters continued to be maintained to provide living accommodations for LDWF employees while conducting work at State Wildlife. Routine maintenance included grass cutting, spraying of herbicide, installation of new signs, repairs to the water well, etc.

Coastal staff replaced boundary signs and regulation signs, and cleaned up trash and sprayed herbicide on a routine basis at the weirs. They also fixed and replaced loose boards on the walkways of several weirs.

In July 2007, area staff assisted Raleigh Rogers, Iberia Parish nuisance hunter, with the removal of 14 nuisance alligators from multiple weirs at the refuge. The alligators were removed following multiple complaints from the public utilizing the refuge.

A dredge permit application was created and submitted to USACE/LDNR to dredge the canal to the North Lake Weir and the USGS marine lab near the headquarters.

Dredging the canals will improve access to these areas. Coastal staff hopes to dredge the canal during the 2008-2009 fiscal year.

Coastal Operations personnel attended meetings concerning the operation and maintenance of the Lake Portage Land Bridge CWPPRA project. Also, Coastal staff provided logistical assistance for an interagency (Natural Resources Conservation Service, LDNR and LDWF) field trip to State Wildlife to conduct an annual inspection of the project. Thus far, the project has been a success. The filled canal has maintained elevation and the dredge material has vegetated. The excursion was also held to inspect the southern boundary of the project where shoreline erosion is becoming an issue that may need to be addressed to avoid adverse impacts to the project site.

Controlled burning of marsh in the vicinity of North Lake and Bob Lake was conducted during fiscal year 2007-2008 to increase the production of preferred food plants for over-wintering waterfowl. Approximately 150 acres were burned by Marsh Island personnel.

Coastal Operations staff continued with the replacement of "contents" items that were lost during Hurricane Rita in 2005. Coastal staff has purchased approximately 20 percent of the equipment and supplies that were damaged or destroyed during the storm. The items were replaced using FEMA funds.

Due to the lack of use of the facility, salinity, rainfall and recreational use data were not collected at the refuge.

## **MINERALS MANAGEMENT**

The mineral program is responsible for ensuring that mineral activities on all LDWF properties are compatible with the environment, and that WMA/refuge goals and objectives are met. Mineral program staff reviewed and evaluated 99 (-5 from fiscal year 2006-2007) well locations, pipeline projects and other mineral exploration related permits on LDWF properties. The program also issued three (-9) rights-of-way, five (+1) surface leases and one (-2) State Agency lease during fiscal year 2007-2008. All of these projects are reviewed and coordinated with field personnel to ensure that they are compatible with LDWF management area programs.

The mineral program generated fees in excess of \$28 million (+≈\$6 million), which included mineral royalties, rights-of-way, surface leases and seismic fees. In addition, the mineral program staff issued 34 (+3) airboat/marsh buggy permits for various activities on LDWF properties. The mineral program also coordinated with the Office of Conservation for the removal of numerous abandoned oil and gas facilities on WMAs and refuges. The mineral program continues to work closely with other programs within LDWF and the Coastal Management Division within LDNR in the implementation of the efforts of the streamlining of Coastal Use Permits.

## HABITAT

The objectives of the Habitat Section are to gather and compile data on fish and wildlife resources, determine the requirements for conserving the resources and provide information and technical assistance to governmental agencies, non-governmental entities and the public. Data are also gathered on the potential impacts of human activities on the resources. These data and recommendations are provided to planners and decision-makers in advance of execution of projects in order to avoid, minimize or mitigate for any adverse environmental impacts. In fiscal year 2007-2008, the Habitat Section was divided into the five following programs: Louisiana Natural Heritage Program; Louisiana's Wildlife Action Plan and State Wildlife Grants; Statewide Environmental Investigations; Louisiana Natural and Scenic Rivers Program; and Grant and Contract Management.

### Louisiana Natural Heritage Program (LNHP)

LNHP gathers, compiles and disseminates information on unique, rare, threatened and endangered species, and unique, rare and critical habitats on the state, federal and international level.

In fiscal year 2007-2008, LNHP staff reviewed 1,049 project proposals and produced 22 digital data agreements for various public and private projects, assessing possible impacts on rare, threatened and endangered species and exemplary natural communities. Approximately 450 field days were spent by staff conducting surveys on individual species and natural communities for updating the LNHP database. A total of 80 new and 800 updated Element Occurrence Records were entered into the database.

LNHP administered federal aid grants for species of special concern through the Endangered Species Act, Section 6 Program, and participated in the State Wildlife Grants Program. Section 6 projects included the interior least tern, gopher tortoise, Louisiana black bear, red-cockaded woodpecker, Louisiana pine snake, Louisiana pearlshell, manatee and the endangered plant earthfruit. Projects funded through State Wildlife Grants included breeding bird surveys, computerizing rookery and stream data, digitizing bald eagle nesting sites and the Natural Area Registry Program.

During fiscal year 2007-2008, LNHP cooperated with the Louisiana Forestry Association to develop and post 74 "fact sheets" on LDWF's website. These fact sheets describe species and natural communities in Louisiana that are ranked as G1 (critically imperiled) or G2 (imperiled). For each element, a description, distribution, threats, beneficial management practices and a list of references were among the information included. Photos of each were also included. These fact sheets are available on the LDWF website at <http://www.wlf.louisiana.gov/experience/naturalheritage/g1andg2elements/>, and are a valuable resource to researchers and the public. In addition, the project will be used as a springboard to develop other fact sheets in subsequent years.

LNHP staff participated in Christmas Bird Counts and statewide Louisiana Amphibian Monitoring Program survey routes. Staff also coordinated and participated in the annual Breeding Bird Surveys, and were able to pay participants for the first time in the 25+ year history of the program.

LNHP completed the third, and initiated the fourth, year of the Sherburne WMA Monitoring Avian Productivity and Survivorship Study (MAPS). This ongoing project is designed to assess LDWF's timber prescriptions on nongame landbird populations. LDWF staff will perform a detailed data analysis after five years of MAPS data have been collected. LDWF's participation in the nationwide MAPS program allows researchers to assess regional nongame landbird population trends as well as local population trends.

The staff coordinated and conducted other wildlife surveys and activities, including the following:

- Coordinated and conducted winter piping plover surveys for coastal Louisiana with partners from LSU, Barataria Terrebonne National Estuary Project, USFWS and The National Audubon Society.
- Conducted mist-netting demonstrations at the Grand Isle Migratory Bird Festival and National Hunting and Fishing Day.
- Attended bird point count training and conducted point counts on several WMAs to monitor landbird population responses to timber treatments.

Staff biologists regularly interacted with the public through school lectures, workshops, field days, conferences and festivals. The Grand Isle Migratory Bird Festival allowed the public to view bird banding activities and provided the opportunity to discuss nongame bird conservation on our state lands.

LNHP staff represented LDWF on numerous committees and at meetings including the Southeast Partners in Flight Management Board, the Mississippi Flyway Council Nongame Technical Committee, the Western RCW Translocation Cooperative, the Western Gulf Coastal Plain Joint Venture, National Audubon Society Important Bird Areas Planning Committee, the Atchafalaya Basin Bird Committee, State Wildlife Grant Committee and the Louisiana Forestry Association Endangered Species and Recreation Committee. Staff also delivered presentations to various user groups regarding nongame resource issues.

In fiscal year 2007-2008, staff issued 97 Scientific Collecting permits for research statewide. Also, in late 2007, owners of restricted snakes (constrictors over 12 feet in length and venomous snakes) were required to obtain permits from LDWF. By the end of the 2007-2008 fiscal year, 23 restricted snake permits had been issued.

### Louisiana's Wildlife Action Plan and State Wildlife Grants

LDWF receives federal funding for the conservation of declining fish and wildlife species. Conservation of spe-

cies of concern is guided by the state's Wildlife Action Plan, which was approved in December 2005 by USFWS. The Wildlife Action Plan has four major goals: species conservation; habitat conservation; outreach and education; and partnership building.

During fiscal year 2007-2008, five grants were closed. Copies of final reports for each of the closed grants are available from the State Wildlife Grants Coordinator. Thirty-five grants were active, including 12 grants which partially fund LDWF projects and that are funded year-to-year. For more information about the Wildlife Action Plan or the State Wildlife Grant program, including abstracts for closed projects, please visit <http://www.wlf.louisiana.gov/experience/wildlifeaction-plan/>.

A Request for Proposals was published on Feb. 8, 2008. Twenty-eight proposals were received, and 17 proposals were funded. Ten of the proposals were in-house proposals submitted by LDWF staff. Example in-house projects include stipends for volunteers collecting Breeding Bird Survey data, a Swallow-tailed Kite Roost Survey and promotion of prescribed burning on private lands to enhance quality of fire-maintained habitats. Seven proposals from universities or non-governmental organizations were funded. Example projects from outside the LDWF include a census of spotted skunk in south Louisiana, a census of fishes and freshwater mussels in southwest Louisiana rivers and a study of aquatic community structure in Louisiana estuaries.

### **Statewide Environmental Investigations**

Statewide Environmental Investigations is authorized under the Fish and Wildlife Coordination Act and is partially funded by a USFWS grant. Staff is responsible for reviewing and providing comments and mitigation recommendations on all permits sought from state and federal environmental regulatory agencies. Staff members received and reviewed over 1,600 state and federal permit applications during fiscal year 2007-2008. In response, written comments and recommendations aimed at avoiding, minimizing and/or mitigating adverse impacts were issued for all state and federal permit applications received.

In addition to permit review, staff participated in permit site inspections and habitat evaluations, provided technical assistance to the public on wetland issues and worked with private developers and consultants involved in the regulatory process. During fiscal year 2007-2008, staff spent approximately 50 days conducting on-site field inspections and participated in approximately 140 meetings with applicants, agents and regulatory agency personnel.

Staff members also represented the agency on two inter-agency Mitigation Bank Review Teams chaired separately by USACE Vicksburg and New Orleans Districts. The purpose of the Mitigation Bank Review Teams is to provide regulatory review, approval and oversight of wetlands mitigation banks. During fiscal year 2007-2008,

staff evaluated, inspected and provided technical comments and recommendations on over 35 proposed wetlands mitigation banks.

Staff was involved in the planning and evaluation of 12 proposed Federal Energy Regulatory Commission (FERC) projects. FERC regulates the interstate transmission of natural gas, oil and electricity. Many of these 12 large scale projects included pipelines which crossed multiple parishes and often posed significant adverse impacts to wetlands, stream crossings, riparian corridors, species and communities of conservation concern and other fish and wildlife resources. Staff worked with the applicants, agents and FERC to avoid, minimize and/or mitigate these adverse impacts.

LDWF worked with numerous governmental agencies in conducting environmental investigations including USFWS, NMFS, Environmental Protection Agency, USACE, U.S. Forest Service, the Natural Resources Conservation Service of the USDA, Federal Highway Administration, Federal Aviation Administration, Farmers Home Administration, USCG, Department of Energy, Federal Energy Regulatory Commission, Department of Defense, Housing and Urban Development, Louisiana Department of Transportation and Development, LDNR, Louisiana DEQ and the Louisiana Department of Culture, Recreation and Tourism.

Statewide Environmental Investigations also assisted in protecting all lessees of private oyster grounds by reviewing and approving, sometimes with modification, water bottom assessments submitted by project applicants prior to the initiation of activities affecting state water bottoms under lease to private parties for oyster production. Coastal Use Permit applicants can be required, at the request of Statewide Environmental Investigations staff, to modify the activity if the proposed location unnecessarily impacts an oyster reef. Approximately 171 water bottom assessments were reviewed and approved by agency staff during fiscal year 2007-2008.

### **Louisiana Natural and Scenic Rivers Program**

The Scenic Rivers Program is charged with the administration of the Louisiana Natural and Scenic Rivers Act. The act requires that LDWF, through the Scenic Rivers Coordinator, administer a permitting system for activities that have potential for significant ecological impact to designated natural and scenic rivers, as well as a system of monitoring, surveillance, investigation and enforcement for the purpose of insuring compliance with the act. The Scenic Rivers Act, and the rules and regulations promulgated under its authority, provide for the development of management plans, stream surveys and enforcement.

Currently, there are approximately 80 streams and/or stream segments in the system constituting an estimated 3,000 linear miles of Louisiana's streams, rivers and bayous. Drakes Creek in Vernon Parish was added to the Natural and Scenic River System in the 2007 Regular Session of the Legislature. Bayou Manchac in East Baton

Rouge and Ascension parishes, which was nominated by the Legislature in 2008 for inclusion as an Historic Scenic River System, is currently being studied, and a report is being prepared for consideration in the Legislature's 2009 Regular Session. If included, it will result in an average addition of one stream per year to the system over the last 11 years.

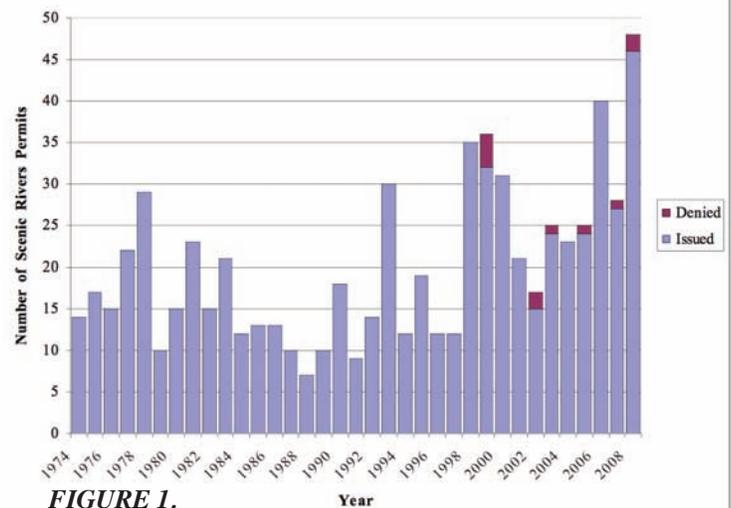
Several enforcement actions were initiated in fiscal year 2007-2008. These included cases of reservoir construction, illegal point source discharges, operating on scenic rivers without permits and illegal commercial cutting of trees. One case of channel realignment in St. Tammany Parish made in 2006 remains an ongoing restoration effort by the responsible party. Staff has continued to work with the Webster Parish Police Jury and the State Land Office to remove a number of out-of-service bridges and other man-made obstructions on Bayou Dorcheat, thus restoring navigability and natural flow to the stream. The coordinator, through routine surveillance, project inspections and response to complaints, ensured compliance with permit conditions, utilization of adequate sediment control measures and appropriate clean up and restoration of permitted project sites.

The coordinator maintained regular contact with both state and federal agencies to insure that designated scenic rivers were considered in all levels of planning and permitting. The coordinator also worked closely with city planners, police juries, mayors and local interest groups and organizations throughout the state. The coordinator gave presentations on the program to two local civic organizations and continues to participate as chair on a parish government board formed to restore and promote Bayou Dorcheat in Webster Parish. The coordinator gave a presentation to the Tangipahoa Landowners Association on how development is regulated by the Scenic Rivers Program. The coordinator also hosted the Louisiana Audubon Council's annual meeting at the Monroe District Office and gave them a presentation on the status of the Scenic Rivers Program including updates on recent violations and the remedial action taken by LDWF as a result.

Two emergency Scenic River permits were issued. One was for Hurricane Katrina related cleanup. The coordinator worked closely with the Natural Resources Conservation Service to insure that this work was done in an environmentally sensitive, yet expedient manner. The second was issued for the removal of an illegally placed road and culvert on Bayou Dorcheat in Webster Parish. This activity too was monitored closely by the coordinator.

A total of 25 Scenic Rivers permits were issued during fiscal year 2007-2008. **FIGURE 1** below summarizes the annual history of the Scenic Rivers Program permitting system from 1974-2008. Two permits were denied; one for a point source discharge from a wastewater treatment plant and the other for a proposed gravel mining operation. The coordinator spent 59 days in statewide travel status conducting site visits and investigations, giving presentations and attending meetings.

### ANNUAL NUMBER OF SCENIC RIVERS PERMITS ISSUED AND DENIED



**FIGURE 1.**

### Grant and Contract Management

Grant and Contract Management is the support for scientific contracts that insures that all the requirements of the grantor and law are met.

Draft scientific contracts were received by Grant and Contract Management in varying degrees of completeness. When completed, all contracts resembled each other in content and format and included all necessary project-specific clauses. Completed contracts were then submitted to the appropriate administrators for signature, thus authorizing the action.

Upon payment request, Grant and Contract Management insured that payment conditions were met and that LDWF was satisfied with the work. Then payments or reimbursements were made. Grant and Contract Management also assisted LDWF project managers in the contract amendment process.

Grant and Contract Management kept contracts working toward their objectives by getting them through the approval process promptly, having the contractors reimbursed timely and obtaining the desired results. In fiscal year 2007-2008, Grant and Contract Management maintained 101 total contracts, 59 of which were active at the end of the fiscal year.

### ALLIGATOR PROGRAM

Louisiana's Alligator Management Program consists of two complex segments: research/management of the wild population and a statewide farm/ranch program. The program is funded by self-generated revenues (alligator hide tag fees, shipping label fees, other alligator related fees and alligator hide severance taxes).

### Wild Alligator Program

Inventory methods, harvest regulations, tagging and reporting requirements and a complex computer program are continually upgraded to regulate and monitor a sustainable use alligator management program in Louisiana.

Annual coast wide alligator nest surveys are conducted to index alligator populations and to establish harvest quotas in coastal Louisiana. During summer 2007 we estimated that 42,150 alligator nests were present in the coastal marsh habitat, a dramatic increase from the previous year (**FIGURE 2**). Coastal habitats have recovered significantly from the 2005 hurricanes and the 2006 drought.

Wild alligator harvest quotas are established to correlate harvest with alligator population density and distribution. Alligator harvest tags are allocated to individuals who either own or lease land that is considered alligator habitat. Digital landowner and survey information are combined with the latest aerial photography images to allow for an accurate assessment/classification of each participant's property. The majority of the lands enrolled in the wild alligator harvest program have been entered in the system.

In September 2007, the annual wild alligator harvest produced 31,124 alligators, which averaged 7.5 feet in total length and had an estimated value of over \$12.2 million. Harvest numbers were increased by 14 percent as habitats and alligator populations recovered from the 2005 hurricanes and subsequent drought. Adult-sized alligators (those six feet and larger) comprised 92 percent of the standard harvest (**FIGURE 3**).

In September 2007, the experimental bonus tag program was continued. This program is designed to harvest four to five-foot alligators which are abundant in the wild alligator population but are not targeted in the standard wild harvest program. Over 3,880 bonus alligators were harvested averaging six feet in length, which were valued at nearly \$1.3 million.

#### Farm Alligator Program

The December 2007 statewide farm/ranch inventory was 617,063. The 2006 farm harvest, September 2006-August 2007, was 271,875 with a base value of \$50.4 million. Average length of farm raised alligators was 4.05 feet with 95.6 percent of the harvest comprised of three to four-foot alligators (**FIGURE 4**).

During 2007, a total of 766,115 wild alligator eggs were permitted for collection. A total of 501,175 wild alligator eggs were collected producing 426,480 hatchling alligators. Farmers are required to return 12 percent of the hatchlings as four-foot alligators, which compensates for the collection of eggs. The remaining animals can be sold by the farmer. The release in 2007-2008 totaled some 49,287 alligators. All released alligators were measured, marked, tagged and sexed. Survival of farm-released alligators appears to be similar to wild alligators. Several thousand re-trapped alligators were harvested in September 2007. Data evaluation continues on survival rates of the farm released alligators.

Program staff routinely communicates with various alligator industry participants including hunters, farmers, landowners and dealers. Information is provided regarding wild alligator and alligator egg harvests, harvest sta-

### LOUISIANA COASTAL MARSH ALLIGATOR NEST PRODUCTION, 1970-2007

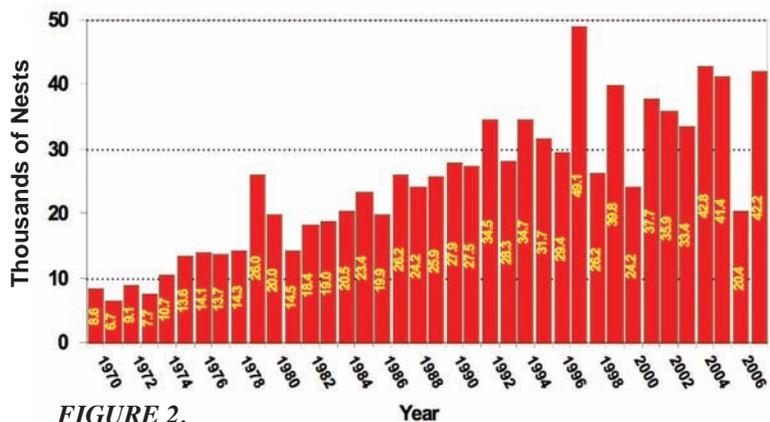


FIGURE 2.

### LOUISIANA WILD ALLIGATORS HARVESTED, 2007 REGULAR HARVEST SKIN LENGTHS

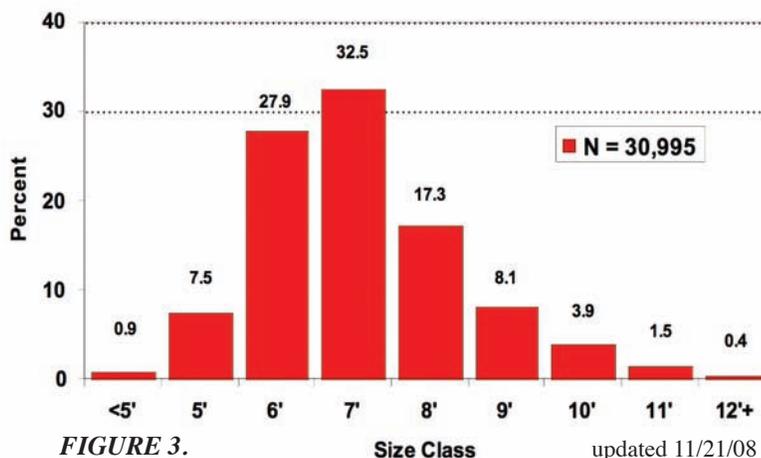


FIGURE 3.

### LOUISIANA FARM ALLIGATORS HARVESTED, 2006 SKIN LENGTHS

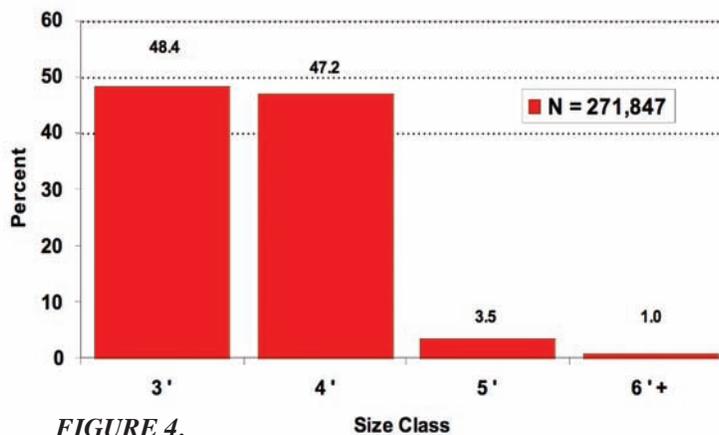


FIGURE 4.

updated 11/21/08, 2006 Tag Year

tistics and management recommendations. Staff routinely visits alligator farms providing recommendations on alligator husbandry and culture. Numerous requests for information are handled each year. The Alligator Program staff continued production of an informative newsletter which is distributed to alligator industry participants periodically.

### **Hurricane Impacts**

Coastal Louisiana was impacted by two devastating hurricanes in 2005. Hurricane Katrina struck southeastern Louisiana on Aug. 29, and Hurricane Rita hit southwestern Louisiana on Sept. 24. Massive tidal storm surges inundated coastal marshes with high salinity waters across virtually the entire coast of Louisiana, which is prime alligator habitat. Some direct alligator mortality was observed, but overall long-term impact of these storms on alligator habitat remains to be seen. Direct physical damage to wetlands through scour, scrapes, erosion and rolling has been noted, and high salinities were accentuated by lower than usual winter rainfall after the storms. Storm and drought impacts in Cameron and Vermilion parishes were severe. Alligator habitats and populations throughout these southwestern Louisiana parishes were particularly stressed during the spring and summer of 2006. Annual coastal nesting surveys conducted in late June and early July 2006 provided additional data on alligator habitat alteration resulting from these hurricanes. Nest production in southwest Louisiana in 2006 was severely impacted as per above, compounded by the severe superimposed drought.

During spring 2007, habitat conditions were greatly improved as compared to the previous year. Surface water levels and interior marsh water salinities returned to pre-hurricane levels. In 2007, coastal alligator nest production increased dramatically as wetland habitats and alligator population recovered. Alligator farmers collected near record numbers of wild alligators that year.

### **Research Activities**

The following list provides a summary of the various research and monitoring projects that the alligator program staff conducted and/or participated in during fiscal year 2007-2008.

#### **Monitoring**

1. *Evaluation of survival, growth and reproduction in farm released alligators* - This activity involves numerous projects related to survival analysis, growth and reproductive success (farm-released vs. native wild). Due to the recent reduction of the 14 percent release rate, it is imperative to monitor survival closely. This will be even more important in the future, when the 12 percent return rate starts with the 2007 permits (releases "due" in 2009). Although some growth information has been published, we plan to evaluate growth rates in more detail; we now have "retraps" that were captured 10-15 years since release, and this is undoubtedly one of the largest mark-recapture projects currently in progress. Staff from the LSU Department of Experimental Statistics

assists with annual evaluation of survival based on farm "retraps" recovered in September harvests. We are also evaluating dispersal of animals from release sites.

2. *Coast wide nest survey* - The annual coastal nesting survey is essential for monitoring our alligator population, and is used annually to determine wild alligator and wild alligator egg harvest quotas (for the adult harvest each September as well as egg ranching quotas). This is an integral part of our required "finding of no detriment" needed for export authority. This survey was of particular interest in summer 2006, providing valuable information to evaluate the impact of hurricanes Katrina and Rita, and the worst drought in 111 years that occurred in fall/winter/spring of 2005-2006. We anticipate similar such needed information in 2009, due to hurricanes Gustav and Ike striking in 2008.
3. *Evaluation of statewide harvest program* - We continue to analyze size class frequency distribution, average size, sex ratios, etc. for alligators harvested each year. This project, coupled with coast wide nest survey will be continued as long as a harvest program is in place. Data generated from these projects provides the basis for evaluating the impact of our current harvest strategies, and for establishment of annual wild harvest quotas.
4. *Evaluation of alligator nest density* - LDWF biologists work with selected cooperating alligator farmers to gain access to their GPS data from annual egg collections. This study will facilitate comparisons between our coast wide nest survey and estimates of nest density as recorded by the farmer during egg collections. Some farmers have advised staff of reduced nest production on selected wetlands; this study will allow us to evaluate nest distribution and density changes over time. Data from 2006 was particularly important for comparisons due to the massive impacts of hurricanes Katrina and Rita in late 2005. We anticipate similar such needed information in 2009, due to hurricanes Gustav and Ike striking in 2008.
5. *West Nile Virus (WNV)* - LDWF, in conjunction with LSU School of Veterinary Medicine, continues to monitor occurrence of WNV on alligator farms in Louisiana. Initial mortality related to WNV occurred in fall/winter 2003. Aggressive mosquito control on farms has reduced on-farm mosquito populations and seems to have reduced the incidence of WNV in 2007-2008. Studies have determined that WNV exposure is a predisposing factor in development of "PIX/LPSA" skin lesions.

#### **Contracts**

1. *Diagnostic services - LSU School of Veterinary Medicine (Dr. Nevarez)* - Dr. Nevarez is contracted to provide diagnostic services as needed for the alliga-

tor industry. Farmers may consult with Dr. Nevarez at any time for assistance with any alligator husbandry or disease issues.

2. *LSU Experimental Statistics* - The LSU Department of Experimental Statistics is under contract to provide technical statistical expertise for numerous alligator projects; most importantly, the evaluation of survival of farm-released alligators, population trends from nesting survey data and more recently, hide grade/length correlations.
3. *Toxicology* - We established a new contract with Dr. Val Lance to determine if any environmental contaminants (heavy metals) exist in wild alligators; preliminary results documented low levels or none detected. Yolk/embryo samples for this project were collected in summer 2005, and tissue samples (liver, kidney and muscle) from wild harvested alligators were collected in September 2005 and September 2006. Results have been presented at meetings and a final report submitted and the contract ended in early 2008. A paper on this work was presented at the Crocodile Specialist Group Meeting in Bolivia in June 2008.
4. *Hurricane effects on alligator physiology* - We initiated a new study to determine the effects of high salinities seen in the marsh after Hurricane Rita by collecting blood samples from wild alligators to measure stress hormone (plasma corticosterone), electrolytes (sodium, potassium, chloride) and osmolality, as well as general body condition and behavior of the alligators. The superimposed drought in winter of 2005-2006 will make interpretation of results difficult. A manuscript was prepared by LDWF staff and presented by Dr. Lance at the International Union for Conservation of Nature's (IUCN) Crocodile Specialist Group Meeting in Montlimar, France in June 2006. Updated findings were prepared to submit for publication in the scientific literature, possibly with additional data from Hurricane Ike. This contract ended in mid-August 2007. A paper on this work was presented at the SICB meeting in San Antonio in January 2008 and at the Crocodile Specialist Group Meeting in Bolivia in June 2008.
5. *Evaluate the health status of farm released alligators* - A total of 250 alligators originating from nine different farms were sampled to evaluate their overall health at the time of release. Study results indicate that the released alligators are healthy, that West Nile virus remains the most important infectious disease for captive reared alligators and that continued surveillance is necessary. Alligators brought into Louisiana from Georgia for release were found to be of poorer health than Louisiana reared alligators and further release of these animals should be closely monitored. Continuation of this study is planned for 2008-2009.
6. *Determine the use of antibiotics on alligator farms in Louisiana and determine the pharmacokinetic disposition and tissue distribution of tetracycline after single-dose administration* - Phase 1 of this project was completed with some difficulties encountered in achieving therapeutic levels of tetracycline in alligators. Several trials were conducted in order to determine dosage rates. In 2008-2009 this research will continue to determine tissue distribution levels and elimination rates. This information can be used by veterinarians and alligator ranchers to determine appropriate antibiotic treatment regimens for captive animals with susceptible infections.

#### **Publications/Cooperative Research**

The following scientific papers were published from approximately July 2007-June 2008:

Elsely, R. M. 2007. Precocious reproductive development in a farm-released American alligator, *Alligator mississippiensis*. Herpetological Bulletin. No. 102: 11- 14.

Hicks, J. W., T. Owerkowicz, and R. M. Elsely. 2007. Hypoxia, but not hyperoxia, constrains the embryonic growth of the American alligator. (Abstract). 67th Annual Meeting of the Society of Vertebrate Paleontology. Austin, Texas. October 17 – 20, 2007.

Merchant, M., S. Williams, P. L. Trosclair III, R. M. Elsely, and K. Mills. 2007. Febrile response to infection in the American alligator (*Alligator mississippiensis*). Comp. Biochem. Physiol. A. 148:921-925.

McNew, R. M., R. M. Elsely, T. R. Rainwater, E. J. Marshland, and S. M. Presley. 2007. Survey for West Nile Virus infection in free-ranging American alligators in Louisiana. Southeastern Naturalist. 6(4):737-742.

Reno, P. L., W. E. Horton, Jr., R. M. Elsely, and C. O. Lovejoy. 2007. Growth plate formation in alligator and mouse metapodials: evolutionary and functional implications. JEZ (Mol Dev Evol) 308B: 283-296.

Elsely, R.M., V. A. Lance, P. L. Trosclair, III, and M. Merchant. 2008. Effect of Hurricane Rita and a severe drought on alligators in southwest Louisiana. (Abstract). Proceedings of the 19th Working Meeting of the IUCN-SSC Crocodile Specialist Group. Santa Cruz, Bolivia June 2 - 7, 2008. pg. 28.

Lance, V. A., L. Cua, R. M. Elsely, and P. L. Trosclair, III. 2008. Experimental lead poisoning and blood ALAD enzyme activity in juvenile alligators. (Abstract). Proceedings of the 19th Working Meeting of the IUCN-SSC Crocodile Specialist Group. Santa Cruz, Bolivia June 2 - 7, 2008. pg.33.

Lance, V. A., R. M. Elsely, M. Merchant, and P. L. Trosclair, III. 2008. Effects of Hurricane Rita on alligators in southwest Louisiana. (Abstract). SICB meeting, San Antonio, Texas, January 2008.

Merchant, M., P. Sanders, C. Couvillion, and R. M. Elsey, 2008. Development of innate immunity in juvenile American alligators. (Abstract). Proceedings of the 19th Working Meeting of the IUCN-SSC Crocodile Specialist Group. Santa Cruz, Bolivia June 2 - 7, 2008. pg.32.

Owerkowicz, T., J. W. Hicks, and R. M. Elsey. 2008. Chronic hypoxia, but not hyperoxia, constrains growth in the American alligator: A case study in paleophysiology. (Abstract). SICB meeting, San Antonio, Texas, January 2008.

Owerkowicz, T., J. W. Hicks, and R. M. Elsey. 2008. Chronic hypoxia and hyperoxia alter the post-hatching growth and metabolism of the American alligator: a case study in experimental paleophysiology. (Abstract). Experimental Biology meetings (American Physiological Society section), San Diego, California, April 2008.



# OFFICE OF FISHERIES

*The Office of Fisheries is comprised of two divisions, Marine Fisheries and Inland Fisheries.*

## **MARINE FISHERIES DIVISION**

The Marine Fisheries Division is charged with management of the full range of Louisiana's estuarine and marine resources. Division responsibilities are categorized as Fisheries Management Programs and Habitat Protection Programs. Participation in numerous local, state, regional, national and international committees, task forces and councils provides professional expertise in the development of state and federal regulation, legislation and standards governing the wise use of renewable natural resources.

## **INLAND FISHERIES DIVISION**

The Inland Fisheries Division manages fish populations and habitats for the conservation and improvement of sport and commercial fishing primarily in freshwater areas of the state. Division responsibilities are divided into two major categories: Fisheries Management and Aquatic Habitat Management.

# MARINE FISHERIES

The Marine Fisheries Division is charged with management of the full range of Louisiana's estuarine and marine resources. Division responsibilities are categorized as Fisheries Management Programs and Habitat Protection Programs. Participation in numerous local, state, regional, national and international committees, task forces and councils provides professional expertise in the development of state and federal regulation, legislation and standards governing the wise use of renewable natural resources.

## THE HURRICANES OF 2005

The 2005 hurricanes Katrina and Rita impacted the entire Louisiana coastline and its fisheries. These fisheries have social, cultural and economic facets which make them an extremely valuable resource for the state. Especially affected were the oyster and menhaden fisheries which experienced severe losses as a result of the storms. Also showing losses were the shrimp, crab and other saltwater finfish fisheries. These losses were in catch, landing, and/or participating vessels able to take fishing trips. Commercial and recreational fishing trips declined sharply after the storms due to shore-side facility and habitat damage. All Marine Fisheries Division Coastal Study Areas were also affected by the storms.

Our goal is to continue to address the needs of coastal fishery resources, commercial and recreational fishing industries, fishing communities and fishermen of Louisiana. The aim of these efforts is to restore Louisiana fisheries damaged by the 2005 hurricanes. This restoration includes reseedling, rehabilitating and restoring oyster reefs, rehabilitating oyster bed and shrimp grounds, conducting cooperative research to monitor the recovery of Gulf fisheries, and assisting the commercial and recreational fishing industries as illustrated by programs detailed in this report.

## EMERGENCY DISASTER RECOVERY PROGRAM I (EDRP1)

In response to the hurricanes of 2005, Congress authorized its first fishery disaster relief in June 2006 (Public Law 109-234). On Aug. 25, 2006 the U.S. Department of Commerce announced the issuing of a grant to the Gulf States Marine Fisheries Commission to aid Louisiana, Mississippi, Alabama, Texas and Florida in rebuilding fisheries. NOAA granted funds to the Gulf States Marine Fisheries Commission for further subgrant to the Gulf coast states. Louisiana's subgrant awards are: OR-RRR-020-2006-01 entitled Reseeding, Rehabilitating and Restoring Oyster Reefs (**Job 1**); OB-SGR-021-2006-01 entitled Rehabilitating Oyster Bed and Shrimp Grounds (**Job 2**); and CR-M-022-2006-01 entitled Cooperative Research to Monitor Recovery of Gulf Fisheries (**Job 3**).

Following the passage of hurricanes Katrina and Rita, fishermen from across the coast formed the Louisiana Fishing Communities Rebuilding Coalition and identified funding priorities for the recovery of Louisiana's commercial and recreational fisheries. Priorities including debris removal and the evaluation of the status and health of natural resources are addressed by this congressional appropriation.

### Authorized purposes and funding categories of P.L. 109-234:

1. *Reseeding, rehabilitating and restoring oyster reefs:* Surveys of public oyster seed grounds and seed reservations, public and private oyster reef rehabilitation including sediment/debris removal and reef building; biological/environmental monitoring on the public grounds
2. *Rehabilitating oyster beds and shrimp grounds:* Documenting and removing underwater obstructions/wet debris; projects to restore marine species access to impounded areas and to demonstrate use of oyster reef to protect shorelines
3. *Cooperative research to monitor recovery of gulf fisheries:*
  - a. Monitoring recovery of fishing industries, surveying licensed fishermen, dealers and processors to document and report debris on the fishing grounds; characterize present fishing operations and to collect investment costs, operating costs, handling and storage capacity; perceived problems facing the industry, opinions on various management practices and other operation characteristics; recreational fishery surveys.
  - b. Funding for fishery-independent data collections to monitor recovery of Gulf fishery stocks.

Projects will be auditable and accountable. It is the intention of LDWF to include local fishing community participants and create partnerships with parishes or other local entities for best use of local resources, most benefits to communities and fisheries. General planning meetings were held among project staff on a regular and continuing basis throughout the planning and implementation period. Scoping and planning meetings were held with state and federal agencies and representatives of the fishing industries to identify needs and opportunities. A contract was signed with Postlethwaite & Netterville, a professional accounting corporation, to implement fiscal and accounting processes and controls for management of grant activities.

### EDRP1 JOB 1: RESEEDING, REHABILITATION AND RESTORATION OF OYSTER GROUNDS.

#### Private Oyster Resource Reseeding, Rehabilitation and Restoration:

- Work on private oyster leases to restore their productivity conducted under a mutually agreed upon

Cooperative Endeavor Agreement to:

- ◊ clean up privately-leased oyster growing areas to remove sediments and debris deposited over oyster reefs by hurricanes.
- ◊ provide cultch material for private oyster leases for oyster bed rehabilitation and restoration.
- ◊ resurvey and re-mark leases impacted by the hurricanes as required under Louisiana statute.
- ◊ offset expenses associated with LDHH oyster relay permit requirements.
- Assist in re-establishing LDHH water quality sampling and laboratory function.
- Develop native stock oyster hatchery through the LDWF Marine Research Laboratory on Grand Isle for spawning and rearing polyploid and Dermo-resistant oysters.
- Implement a records management and archiving system for oyster leasing records to maintain permanent storm-proof records.
- Monitoring private oyster resource reseeding, rehabilitation and restoration by the state to ensure accountability.

**Public Oyster Resource Reseeding, Rehabilitation and Restoration:**

- Surveys of the public oyster areas to map and mark size and location of reefs and bottom type.
- Deposit suitable cultch over public oyster areas to replace storm-damaged reefs. Approximately 80,000 cubic yards of cultch would be deposited over 500 acres of water bottoms on public oyster seed grounds and reservations.
- Monitor oyster recruitment, development, growth and harvest activity on public seed grounds.

**Private Oyster Resource Reseeding, Rehabilitation and Restoration:**

- Final public meeting to sign Private Oyster Lease Rehabilitation (POLR) Cooperative Endeavor Agreements set for Oct. 18, 2007.
- Review of the POLR program by Office of Legislative Auditor as requested by LDWF (Jan. 10, 2008).
- Completion of Legislative Auditor's review (June 25, 2008).

Plans were finalized for the POLR program designed to provide reimbursement assistance to private leaseholders for the performance of rehabilitation activities on privately-leased water bottoms. Rehabilitation activities available to the leaseholder under the POLR program include:

1. sediment/debris removal.
2. cultch deposition.
3. resurveying/remarking of leases.
4. relaying of oysters.
5. bedding (i.e., transplanting) of oysters.
6. replacement of lost/damaged lease records.

The program is currently reimbursing participating leaseholders for costs associated with rehabilitation activities up to a qualifying amount provided that the leaseholder supplies supporting evidence that documents the rehabilitation activities were performed.

The POLR program continues to follow strict audit and accountability measures, and has required that participating leaseholders sign a Cooperative Endeavor Agreement with LDWF. This agreement outlines the terms of the POLR program and the amount of reimbursement the leaseholder qualifies to receive upon the delivery of appropriate supporting documentation. In essence, the leaseholder signs the agreement, travels to his leases and performs the rehabilitation activities, submits a reimbursement request along with appropriate supporting documentation and is then reimbursed for his associated costs (certain limits do apply, e.q. daily vessel rates, etc.).

Leaseholders began signing POLR agreements on May 25, 2007 when LDWF held the first of five public meetings with participating leaseholders. The final public meeting was held in Baton Rouge at the LDWF headquarters on Oct. 18, 2007. At these meetings, leaseholders proceeded through three stations in order to:

1. receive general information about the program.
2. check documents showing person has the legal right to sign the agreement for the leaseholder.
3. sign the POLR agreement.

In addition to the five public meetings, LDWF has scheduled numerous one-on-one interviews with participating leaseholders for the purpose of signing POLR agreements. Jan. 18, 2008 was the final deadline for a leaseholder to sign the POLR Cooperative Endeavor Agreement.

The POLR program continues with approximately 580 oyster leaseholders participating and over \$6 million in reimbursement assistance claims paid to participating leaseholders (as of June 30, 2008) for documented rehabilitation work including the following totals for each reimbursable activity (*TABLE 1*).

**TABLE 1.** POLR reimbursements as of June 30, 2008

ACTIVITY	FY 2007-2008
Sediment/Debris Removal	\$2,357,103.85
Cultch Deposition	\$52,335.00
Remarking/Resurveying	\$227,277.72
Relaying Oysters	\$304,124.32
Bedding Oysters	\$3,082,277.64
Replacement of Lost/Damaged LDWF Lease Documents	\$7,551.00
<b>Total Reimbursement</b>	<b>\$6,030,669.53</b>

The POLR program as described above is monitored both in the office and in the field. LDWF continues to utilize a staff of four working directly on this program in the office, with additional staff performing administrative and field-monitoring duties. LDWF Marine Fisheries field staff members are trained to assist with and to perform random field inspections of POLR-related rehabilitation activities. Office staff collect call-in rehabilitation reports from the toll-free call center, determine where rehabilitation work will occur and distribute information electronically to field staff for field monitoring purposes. Field staff performs monitoring. On dedicated field monitoring days, field staff will perform field work with the main

goal of monitoring and documenting POLR activities. During non-dedicated field work, field staff will document POLR activities when a POLR vessel is encountered during the normal course of field work.

### **Louisiana Department of Health and Hospitals (LDHH) water quality sampling and laboratory function**

The contract between LDHH and LDWF was completed during fiscal year 2007-2008. LDHH completed all deliverables under the contract including the purchase of four new sampling vessels and various pieces of laboratory equipment. Sampling vessels and laboratory equipment will continue to assist LDHH in meeting water quality sampling and water classification requirements so that the Louisiana oyster industry can continue to ship oysters in interstate commerce. In addition, LDHH obtained new aerial imagery from LSU. This imagery is being used by LDHH to update their seasonal water classification maps that are critical for oyster fishermen during the harvesting process.

### **Native stock oyster hatchery**

Although federal funding for this aspect has been reprogrammed, plans continue to be developed to incorporate a native oyster hatchery at the LDWF Marine Lab on Grand Isle, La. This laboratory is currently under construction. Input on the hatchery design has been received during previous fiscal years from researchers from academic institutions within Louisiana, most notably from LSU researchers who have extensive oyster hatchery experience. This input will assist LDWF in designing the hatchery once the laboratory construction is complete. It is anticipated that this project will be completed utilizing other funding sources.

### **Oyster lease data and records management**

A request for proposals (RFP) to develop a data and records management system has been approved and is ready to be submitted for bids. The system will provide for system security, backup and recovery of digital records, an integrated searchable database, metadata generation and integrate physical and electronic records, organizing them and storing critical information in a digital repository. This will give staff the ability to quickly capture, preserve and share information critical to resource management, and insure safety and security of the 104 year oyster lease database and the long-term accessibility and usability of the oyster leasing records by:

- converting paper and cloth lease survey records, maps, plats and other information to microfilm and creating a digital image record of all the above information.
- creating an integrated file management system to make the records more readily accessible.
- updating and improving system data dictionary.

### **Public Oyster Resource Reseeding, Rehabilitation and Restoration**

#### *Side scan sonar surveys of public oyster grounds*

A side-scan sonar survey and water bottom assessment of two important areas of the public oyster seed grounds was completed during fiscal year 2007-2008. Water bottom

characteristics and oyster densities on reefs in Drum Bay and Morgan Harbor (St. Bernard Parish) were determined through a contract with Bio-West, Inc. The side-scan sonar and water bottom assessment determined that 1,769 acres of reef/shell bottoms exist in Drum Bay, while Morgan Harbor contains 2,954 acres of reef/shell bottoms. Oyster sampling on these bottoms found that over 40,000 barrels of oysters were present in Drum Bay and nearly 47,000 barrels of oysters were present in Morgan Harbor.

Plans were also finalized for a side-scan sonar and water bottom assessment of Calcasieu and Sabine lakes in Cameron Parish. Bid packages were released to the public during fiscal year 2007-2008 and it is anticipated that a contract will be finalized with the winning bidder and the project being completed during the next fiscal year.

#### *Cultch placement on public oyster grounds*

Cultch planting (reef building) specifications were developed, and a bid package was published during fiscal year 2007-2008. The winning bid for reef rehabilitation through cultch planting was awarded to Pontchartrain Materials Corporation (PMC) to build a 50-acre reef in Hackberry Bay (Jefferson and Lafourche parishes). The permitting process for the rehabilitation project was also finalized.

The Hackberry Bay cultch plant was accomplished by PMC with close, daily oversight and guidance by LDWF biologists. The 50-acre location of suitable water bottoms was selected and approximately 10,000 cubic yards of limestone, crushed concrete and oyster shell (cultch material) was spread thinly on the bottom. This project location was identified and selected based on water bottom information supplied by a previous federal hurricane disaster project, the Louisiana Oyster Rehabilitation and Promotion Project (Hurricane Lili disaster). LDWF biologists, vehicles and vessels participated in this project.

The schedule and experimental design for biological monitoring of cultch plants is being developed. Biological sampling is being developed to track the development trajectory of oyster resources on the rehabilitated reefs.

Biological monitoring of two previous cultch planting projects (Black Bay and Mississippi Sound) continued during fiscal year 2007-2008. Oyster sampling at these locations in June 2008 indicated the presence of a sizeable seed-oyster stock. On the 200-acre Mississippi Sound (at Turkey Bayou) cultch plant, sample results indicated approximately 50,000 barrels of seed oysters were present. Sample results from the 200-acre Black Bay cultch plant location (near Lonesome Island), indicated the presence of approximately 29,000 barrels of seed oysters.

### **EDRP1 JOB 2: REHABILITATING OYSTER BED AND SHRIMP GROUNDS**

#### **Underwater Obstructions/Wet Debris Removal**

Identifying underwater obstructions on fishing grounds LDWF worked with other state and federal agencies using data and maps provided by NOAA and others to identify underwater obstructions which are fouling the fishing grounds or access channels for fishing vessels.

### **Enhancing state underwater obstruction removal program**

LDWF terminated an inter-agency agreement with LDNR Office of Conservation in April 2008 for a contract for removal of underwater obstructions within state waters. With the approval of NOAA Fisheries, funding for this task will be re-directed to cooperative research programs under development to enhance LDWF's ability to monitor recovery of Gulf of Mexico fisheries.

### **Debris removal**

LDWF received approval from the Division of Administration, Office of State Purchasing for a contract awarded to Crowder-Gulf Joint Venture, Inc. for marine debris removal in state waters. The contract is structured whereby the contractor is assigned debris removal within individual grids measuring four-square miles for a fixed price of \$37,100 per grid. Crowder-Gulf uses side scan sonar equipment to survey all water bottoms within each assigned grid to identify the location of debris contacts (waters less than three feet in depth are not surveyed due to sonar's limited effectiveness in shallow waters). The contractor is required to utilize LA resident licensed vessels and crews comprised of LA resident fishermen and charter boat operators to retrieve debris. Marine debris removal work began in July 2007 within portions of Lake Borgne, followed by clean ups within portions of Lake Pontchartrain (Middle Ground), Lake St. Catherine, Calcasieu Lake and Vermilion and Cote Blanche bays. Through June 2008, approximately 400 square miles of the state's shrimp fishing grounds were cleared of debris at a cost of \$3.71 million.

### **Oyster Bed and Shrimp Ground Rehabilitation**

Coastal habitat rehabilitation and enhancement LDWF has contracted for two research projects under this portion of the grant:

1. *Use of bioengineered reefs for shore protection in coastal Louisiana: comparison and evaluation of shore protection and ecosystem trade-offs*

The USGS Cooperative Research Unit at LSU is conducting research to evaluate the effectiveness, sustainability and ecosystem effects of bioengineered oyster reefs for shore protection along eroding medium and low energy sheltered shorelines in the Barataria and Terrebonne basins. The project will construct bioengineered reefs and monitor the reefs for shoreline change, natural oyster recruitment, survival and growth, and for marsh vigor and the presence of nekton habitat. The project is intended to provide coastal restoration planners with a range of physical parameters including local sea level rise and subsidence rates in which this particular shoreline protection method is likely to be viable. The contract commenced on July 1, 2008. To date, the researchers have identified sites, contacted landowners and oyster leaseholders for permission to perform work on their property, identified sources of shell and limestone for cultch, put out bids for shell and limestone, begun preliminary pre-construction sampling, and applied for and received a coastal use permit from LDNR.

2. *Evaluating the effect of marsh management structures on nekton utilization of salt marshes: A novel approach using dual frequency identification sonar (DIDSON) acoustic imaging technology*

Movement of fishes and other organisms through weirs is being investigated using DIDSON acoustic imaging technology. The project is designed to investigate the relative roles of tide stage, diel periodicity and season on fine scale temporal and spatial movement patterns through weirs in salt marshes. The project will focus on a single location in its first year: a slotted water control structure at Hopedale. In the second year, the project will investigate other types of structures at other locations. To date, the researchers have received permission to experimentally manipulate slot width, designed special slot covers to do so, subcontracted for use of DIDSON equipment and finalized the equipment specifications in preparation for the first field sampling event in December 2008.

### **LDWF Marine Fisheries Data Management System Improvements**

Upgrade server, data entry system and software for data input, storage and analysis. Discussion continues in-house on the feasibility of SAS and alternate data management statistical software options. Planning activities to implement the task were conducted. We have begun the preliminary library work to develop the RFP.

### **EDRP1 JOB 3: COOPERATIVE RESEARCH TO MONITOR RECOVERY OF GULF FISHERIES**

#### **Cooperative Research to Monitor Recovery of Gulf Fisheries**

Tasks being planned/implemented include:

- Survey commercial fishery participants to characterize present fishing operations at the harvester level.
- Log-book program for licensed commercial for-hire captains and fishermen.
- Survey commercial shrimp, oyster and crab dealers and processors.
- Monitor the recovery of commercial fisheries using trip-ticket data.
- Collect trip level effort and economic information from the shrimp, crab and oyster industry through surveys, logbooks and observers.
- Log-book program for for-hire captains to report debris on fishing grounds.
- Survey the recreational fishery.
- Fishery-independent monitoring of the Gulf fishery stocks.

A crab effort survey in the Pontchartrain Basin began with few industry participants due to the opening of the Bonnet Carre flood control structure in April 2008. The structure remained open for a month, and impacted crab harvesting efforts in the lake. The surveys are being conducted by UNO.

## EMERGENCY DISASTER RECOVERY PROGRAM II (EDRP2)

Congress authorized additional funding (\$41.3 million) under the U.S. Troop Readiness, Veterans' Care, Katrina Recovery and Iraq Accountability Appropriations Act (Public Law 110-28) to provide assistance to the Gulf of Mexico commercial and recreational fishing industries affected by Hurricanes Katrina and Rita. The appropriation to the Gulf States Marine Fisheries Commission (GSMFC) for subgrant to the states was approved in August 2007, and Louisiana received legislative budget authority in December 2007. Under this GSMFC Emergency Disaster Recovery Program (EDRP2), Louisiana's two subgrant awards are: Economic assistance to commercial fishers, charterboat operators, vessel owners and wholesale/retail seafood dealers (total to LDWF Office of Fisheries = \$40 million); and Domestic Product Marketing and Promotion of Louisiana Wild-Caught Seafood (total to LDWF Office of the Secretary, Seafood Promotion and Marketing Board = \$1.3 million).

### JOB 1: ECONOMIC ASSISTANCE TO IMPACTED LOUISIANA COMMERCIAL AND RECREATIONAL FISHING INDUSTRY

In order to gather input on allocation and distribution options from fishermen and representatives of the fishing industries, LDWF held a series of eight public meetings with the various fishing sectors from Oct. 4-16, 2007 in Baton Rouge. LDWF developed a formula and qualifying criteria for disbursement of EDRP2 funds consistent with the uses allowed by Section 115 of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006. Allocation formulae were based on the Louisiana Trip Ticket program, a June 2005 report developed by Southwick and Associates on economic benefits of Louisiana fishing industries and LDWF license sales. Economic assistance payments will be distributed to eligible commercial fishers, commercial fishing vessel license holders, wholesale/retail seafood dealers and charterboat operators who were active in the fisheries during the qualifying period (September 2004 - August 2005).

Allocation of funds between the recreational and commercial sectors were based on a June 2005 report developed by Southwick and Associates on economic benefits accruing to the state from the industries in the impacted parishes. LDWF used license files, trip ticket report files and other data to identify potentially eligible commercial fishers, commercial fishing vessel license holders, wholesale/retail seafood dealers and charterboat operators who were active in the fisheries during the qualifying period (September 2004 - August 2005). Within the commercial sector, the allocation among fisheries were based on pre-storm value of landings.

LDWF presented the allocation proposal to the Louisiana Legislature, Joint Legislative Committee on the Budget (JLCOB), to procure budget authority for the subgrant on Dec. 19, 2007. JLCOB approved the LDWF proposal with modification; \$1.4 million was removed from the recreational allocation and added to the commercial allocation

**TABLE 2.** Allocation of funds between commercial and recreational fishing sectors, TED and BRD compliance requirement and anticipated LDWF administrative expenses.

Fishing Sector	Percentage	Amount
Commercial Fishery	71	\$27,670,265
Recreational Fishery	29	\$11,539,086

Allocations to the recreational and commercial fishing sectors determined by analysis of economic benefit to the state as reported by Southwick Associates, 2005 and adjusted as directed by the Joint Legislative Committee on Budget. Allocations calculated after deducting 5% of the total grant for LDWF administrative expenses and appeals and the transfer of \$1,400,000 from the recreational to the commercial menhaden fishery as directed by the Joint Legislative Committee on Budget. Total deduction = \$2,063,650. Remaining balance = \$39,209,351.

**TABLE 3.** Allocation of recreational funds between saltwater and freshwater fisheries.

Recreational Fishing Sector	Percentage	Amount
Saltwater Recreational Fishery	58	\$6,740,038
Freshwater Recreational Fishery	37	\$4,269,462
Charterboats	5	\$529,586

Allocation determined by number of freshwater fishing licenses sold to residents in LDWF defined impacted parishes. Allocation from saltwater recreational fishery to charterboats determined by the economic benefit of the SW Charter or For-Hire Fishery (Southwick Associates, 2005).

**TABLE 4.** Allocation of commercial fishery funds.

Commercial Fishing Sector	Percentage	Amount
Base Payments to Fishermen, Commercial Vessel License Holders and Wholesale/Retail Seafood Dealers	2	\$646,850
Payments to Wholesale/Retail Seafood Dealers	4	\$1,216,475
Shrimp Fishery	43	\$11,882,409
Menhaden Fishery	15	\$4,090,357
Oyster Fishery	12	\$3,362,946
Crab Fishery	9	\$2,466,160
Saltwater Finfish Fishery	7	\$2,017,768
Freshwater Wild Crawfish Fishery	2	\$464,572
Freshwater Finfish Fishery	1	\$228,819
Seafood Promotion and Marketing	5	\$1,293,909

Allocation between freshwater and commercial fisheries determined by dockside value of seafood landed in the twelve-month period prior to Hurricane Katrina. Allocation among commercial fisheries determined by dockside value of species landed within each fishery in the twelve-month period prior to Hurricane Katrina; however, allocation to the menhaden fishery includes an added \$1,400,000 transferred from the recreational fishery as directed by the Joint Legislative Committee on Budget. Allocation between crawfish and finfish fisheries determined by dockside value of wild crawfish and freshwater finfish landed in the twelve-month period prior to Hurricane Katrina.

for the menhaden fishery. For a summary of the amount of funds allocated to each fishing sector under the plan approved by JLCOB for the distribution of federal personal assistance funds to the Louisiana commercial and recreational fishing sectors, refer to **TABLES 2, 3 and 4**.

To qualify for assistance, at least one of the following conditions must have been met with regard to LDWF trip ticket sales or purchases of any type of seafood and having held one or more LDWF licenses during the qualifying period as follows:

- Sales of shrimp, oyster, crab or saltwater finfish and held a Resident Commercial Fisherman's License; and/or
- Sales of shrimp, oyster, saltwater fish or menhaden and held a Resident Commercial Fishing Vessel License; and/or
- Sales of freshwater finfish or wild caught crawfish and held a Resident Commercial Fisherman's License and resided in any of the 26 LDWF-defined hurricane impacted parishes; and/or
- Purchases of shrimp, oyster, crab or saltwater finfish and held a Resident Wholesale/Retail Seafood Dealer License; and/or
- Purchases of freshwater finfish or wild caught crawfish and held a Resident Wholesale/Retail Seafood Dealer License and resided in any of the 26 LDWF-defined hurricane impacted parishes.

The following Louisiana parishes were defined by LDWF as having been impacted by Hurricanes Katrina and Rita based on having suffered from wind damage, flooding, storm surge, fish kills and debris that impacted fisheries: Acadia; Ascension; Assumption; Avoyelles; Calcasieu; Cameron; Iberia; Iberville; Jefferson; Jefferson Davis; Lafayette; Lafourche; Livingston; Orleans; Plaquemines; Pointe Coupee; St. Bernard; St. Charles; St. James; St. John the Baptist; St. Martin; St. Mary; St. Tammany; Tangipahoa; Terrebonne; Vermilion.

The qualifying criteria used to identify resident commercial fishermen, resident commercial fishing vessel license holders and resident wholesale/retail seafood dealers eligible to receive personal assistance payments under the plan are described in the following section. In addition to base payments, each eligible participant who reported any seafood purchases or sales on LDWF trip tickets between Sept. 1, 2004 and Aug. 31, 2005 will receive equal payments from the funds allocated to each license (wholesale/retail dealer, commercial fishing and/or commercial fishing vessel), sector (shrimp, crab, oyster, saltwater finfish, menhaden, freshwater finfish and/or wild-caught crawfish), and tier provided they meet the minimum purchase level corresponding to each tier. Some participants may receive payments from more than one tier based upon the level of reported purchases made (i.e. Tier 2 qualifiers automatically qualify for Tier 1 in addition to Tier 2) as follows:

#### **Base Payments**

Each resident commercial fisherman, commercial fishing vessel license holder and wholesale/retail dealer who

reported any sales or purchases of seafood on LDWF trip tickets from Sept. 1, 2004 - Aug. 31, 2005 will receive base payments as shown in **TABLE 5**.

#### **Wholesale/Retail Seafood Dealer Payments**

**Total amount of funds allocated = \$1,216,475**

*Direct Assistance Payments:* Resident wholesale/retail seafood dealer license holders with purchases of shrimp, oysters, crabs or saltwater finfish, and/or resident wholesale/retail seafood dealer license holders who resided in any of the 26 LDWF-defined hurricane impacted parishes and purchased freshwater finfish or wild caught crawfish are eligible for tiered assistance payments as shown in **TABLE 6**.

#### **Commercial Shrimp Fishery Payments**

**Total amount of funds allocated = \$11,882,409**

*TED/BRD Compliance Payments:* For a demonstrated record of compliance with turtle excluder device (TED) and bycatch reduction device (BRD) regulations, 1,556 resident commercial fishermen who reported sales of trawl-caught shrimp on LDWF trip tickets from Sept. 1, 2004 - Aug. 31, 2005 will share equally in the 2 percent of the total grant or \$825,460 allocated (\$531 per payment). In order to qualify for this payment, fishermen must have no record of TED and/or BRD violations.

*Direct Assistance Payments:* In addition to base payments and any payments made for TED and BRD compliance, each resident commercial fisherman (**TABLE 7**) and/or commercial shrimp fishing vessel license holder (**TABLE 8**) who reported sales of shrimp on LDWF trip tickets from Sept. 1, 2004 - Aug. 31, 2005 will receive payments from the funds allocated to each tier provided they meet the minimum sales level for the tier.

#### **Menhaden Fishery Payments**

**Total amount of funds allocated = \$4,090,357**

*Direct Assistance Payments:* In addition to base payments, each resident commercial menhaden fishing vessel license holder (**TABLE 9**) who reported sales of menhaden on LDWF trip tickets from Sept. 1, 2004 - Aug. 31, 2005 will receive payments from the funds allocated to each tier provided they meet the minimum sales level for the tier.

#### **Commercial Oyster Fishery Payments**

**Total amount of funds allocated = \$3,362,946**

*Direct Assistance Payments:* In addition to base payments, each resident commercial fisherman (**TABLE 10**) and/or commercial oyster fishing vessel license holder (**TABLE 11**) who reported sales of oysters on LDWF trip tickets from Sept. 1, 2004 - Aug. 31, 2005 will receive equal payments from the funds allocated to each tier provided they meet the minimum sales level for the tier.

**TABLE 5.** Allocation of base payments in commercial fisheries.

Category	Number Eligible*	Payment Amount
Commercial Fishermen	7,045	\$50
Vessel Owners	4,624	\$50
Wholesale/Retail Seafood Dealers	634	\$100

**TABLE 6.** Tier allocation among wholesale/retail dealers

Number of Eligible Dealers*	Tier Level	Minimum Purchase Level	Payment Amount	Percentile
441	Tier 1	\$6,769	\$195	30
312	Tier 2	\$24,980	\$718	50
158	Tier 3	\$199,517	\$5,737	75

**TABLE 7.** Tier allocation among shrimp fishermen.

Number of Eligible Shrimp Fishermen*	Tier Level	Minimum Sales Level	Payment Amount	Percentile
2,777	Tier 1	\$1,859	\$201	30
1,983	Tier 2	\$7,899	\$854	50
992	Tier 3	\$34,729	\$3,755	75

**TABLE 8.** Tier allocation among shrimp vessel license holders.

Number of Eligible Shrimp Vessels*	Tier Level	Minimum Sales Level	Payment Amount	Percentile
2,361	Tier 1	\$2,373	\$222	30
1,684	Tier 2	\$9,884	\$926	50
816	Tier 3	\$39,226	\$3,673	75

**TABLE 9.** Tier allocation among menhaden vessel license holders.

Number of Eligible Menhaden Vessels*	Tier Level	Minimum Sales Level	Payment Amount	Percentile
Confidential	Tier 1	\$331,628	\$35,970	30
Confidential	Tier 2	\$925,771	\$100,414	50
Confidential	Tier 3	\$1,151,810	\$124,931	75

**TABLE 10.** Allocation among oyster fishermen

Number of Eligible Oyster Fishermen*	Tier Level	Minimum Sales Level	Payment Amount	Percentile
590	Tier 1	\$7,044	\$486	30
421	Tier 2	\$18,760	\$1,295	50
211	Tier 3	\$65,256	\$4,505	75

**TABLE 11.** Tier allocation among oyster vessel license holders.

Number of Eligible Oyster Vessels*	Tier Level	Minimum Sales Level	Payment Amount	Percentile
523	Tier 1	\$7,123	\$423	30
373	Tier 2	\$24,531	\$1,458	50
185	Tier 3	\$74,106	\$4,405	75

**TABLE 12.** Tier allocation among crab fishermen

Number of Eligible Crab Fishermen*	Tier Level	Minimum Sales Level	Payment Amount	Percentile
1,170	Tier 1	\$2,201	\$259	30
836	Tier 2	\$8,685	\$1,020	50
418	Tier 3	\$26,701	\$3,136	75

**TABLE 13.** Tier allocation among saltwater finfish fishermen.

Number of Eligible SW Finfish Fishermen*	Tier Level	Minimum Sales Level	Payment Amount	Percentile
770	Tier 1	\$151	\$65	30
550	Tier 2	\$608	\$262	50
275	Tier 3	\$7,728	\$3,332	75

**TABLE 14.** Tier allocation among saltwater finfish fishing vessel license holders.

Number of Eligible SW Finfish Vessels*	Tier Level	Minimum Sales Level	Payment Amount	Percentile
629	Tier 1	\$173	\$70	30
475	Tier 2	\$735	\$298	50
246	Tier 3	\$7,239	\$2,933	75

**TABLE 15.** Tier allocation among wild-caught crawfish fishermen.

Number of Eligible Crawfish Fishermen*	Tier Level	Minimum Sales Level	Payment Amount	Percentile
624	Tier 1	\$1,895	\$137	30
446	Tier 2	\$5,110	\$369	50
223	Tier 3	\$13,353	\$963	75

**TABLE 16.** Tier allocation among freshwater finfish fishermen.

Number of Eligible FW Finfish Fishermen*	Tier Level	Minimum Sales Level	Payment Amount	Percentile
480	Tier 1	\$280	\$57	30
343	Tier 2	\$942	\$193	50
172	Tier 3	\$3,831	\$785	75

\*Per LDWE trip ticket records

### **Commercial Crab Fishery Payments**

**Total amount of funds allocated = \$2,466,160**

*Direct Assistance Payments:* In addition to base payments, each resident commercial fisherman who reported sales of crabs on LDWF trip tickets from Sept. 1, 2004 - Aug. 31, 2005 will receive equal payments from the funds allocated to each tier provided they meet the minimum sales level for the tier. Crab fishing occurs in both freshwater and saltwater areas of the state, and a vessel license is required only in saltwater areas. Therefore all funds allocated to the crab fishery are being distributed to licensed crab fishermen only (**TABLE 12**).

### **Commercial Saltwater Finfish Fishery Payments**

**Total amount of funds = \$2,017,768**

*Direct Assistance Payments:* In addition to base payments, each resident commercial fisherman (**TABLE 13**) and/or commercial saltwater finfish fishing vessel license holder (**TABLE 14**) who reported sales of saltwater finfish on LDWF trip tickets from Sept. 1, 2004 - Aug. 31, 2005 will receive equal payments from the funds allocated to each tier provided they meet the minimum sales level for the tier.

### **Commercial Wild Crawfish Fishery Payments**

**Total amount of funds allocated = \$464,572**

*Direct Assistance Payments:* In addition to base payments, each resident commercial fisherman who reported sales of wild crawfish on LDWF trip tickets from Sept. 1, 2004 - Aug. 31, 2005 will receive equal payments from the funds allocated to each tier provided they meet the minimum sales level for the tier (**TABLE 15**).

### **Commercial Freshwater Finfish Fishery Payments**

**Total amount of funds allocated = \$228,819**

*Direct Assistance Payments:* In addition to base payments, each resident commercial fisherman who reported sales of freshwater finfish on LDWF trip tickets from Sept. 1, 2004 - Aug. 31, 2005 will receive equal payments from the funds allocated to each tier provided they meet the minimum sales level for the tier (**TABLE 16**).

To identify and receive responses from eligible participants who choose to participate in an LDWF program to distribute economic assistance payments, LDWF negotiated a contract with South Central Planning and Development Commission (SCPDC) to assist with program administration. LDWF developed and provided eligible Louisiana resident commercial fishermen, certain commercial fishing vessel license holders, charterboat operators and wholesale/retail seafood dealers with a notification of eligibility packet using the most recent mailing address information available through LDWF license files. The packet was mailed to 8,111 commercial fishing participants on May 12 and to 721 charter guides on June 2. In addition to background information on the program and the funding source, the packet included a unique or individual "Qualification for Economic Assistance

Payments and Statement of Certification Form" which identified each specific economic assistance payment component the eligible participant is qualified to receive. This form is required to be completed and returned to the contractor in order for payments to be made. This form also includes a statement certifying that the applicant has not been found in violation of any TED or BRD regulation by either federal or state law enforcement agencies for a demonstrated record of compliance with TED and BRD regulations before returning to the contractor. Packets also contained additional instructions, information on the allocation of funds between and among the various fishing sectors, additional forms including a sample "Board Resolution" which is required to be completed and submitted if the participant is incorporated and a "Trip Ticket Report Application Request Form" which is required to be completed and submitted if a participant would like to request a copy of their personal trip ticket report data and a federal "Form W-9."

The contractor also used print and broadcast media outlets, and implemented a statewide public information program which advertised the availability of federal fisheries economic assistance to eligible Louisiana resident commercial fishermen, certain commercial fishing vessel license holders, charterboat operators and wholesale/retail seafood dealers. The contractor also assisted LDWF with conducting 10 public outreach meetings designed to explain this economic assistance program within fishing communities. Meetings were held in Cameron (May 20), Abbeville (May 21), Chalmette (May 28), Lafitte (May 29), Houma (June 3) and Belle Chasse (June 4).

The contractor provided LDWF with a paper file for each participant containing all required documentation and forms as well as all information or correspondence on applicant requests for a reconsideration of their qualifying status. The contractor also collected personal and business information from eligible participants for future payment and auditing purposes as well as providing LDWF with an electronic database including information contained in the paper files for each eligible participant, including dates "Certification Forms" and Federal "Form W-9" that were mailed and returned, and information on any federal debarment. Contractor would also maintain the confidentiality of all data provided by LDWF as required by law and submit quarterly and final completion reports and invoices for services provided by LDWF.

LDWF also entered into contract with a professional accounting firm to assist with processing payments and developing federal 1099 forms to qualified participants.

The first payment selection was approved on June 24, 2008 and included a total of 18 vendor payments totaling \$87,273.

### **Distributing payments for TED/BRD compliance**

As required by (c)(1) of Section 115 of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, 2 percent of the available appropriation will be disbursed to fishermen with a demonstrated

record of compliance with TED and BRD regulations. LDWF commercial license and trip ticket report files were used to identify shrimp fishers who were subject to TED/BRD regulations (who reported sales of trawl caught shrimp on LDWF trip tickets) from September 2004 - August 2005.

Verification of compliance with federal TED and BRD regulations will be provided by the National Marine Fisheries Service (NMFS). Fishers who meet the criteria will qualify for equal payments. Analysis of data sources indicated the maximum number of qualifying fishers to be 1,556.

Accounting codes were established and used to identify and track all payments/disbursements and all drawdown of funds made under the EDRP2 program:

1. Administration.
2. Assistance Payments to Louisiana Fisheries.
3. TED/BRD Compliance.

Financial reporting to GSMFC will clearly identify expenditures by Reporting Category. Records of individual transactions will be retained by LDWF and provided to GSMFC as requested.

### Recreational Fishing Projects

Planning to develop a program to disburse funds for recreational fisheries projects for public fishing access, enhancement and outreach was conducted.

## FISHERIES MANAGEMENT PROGRAMS

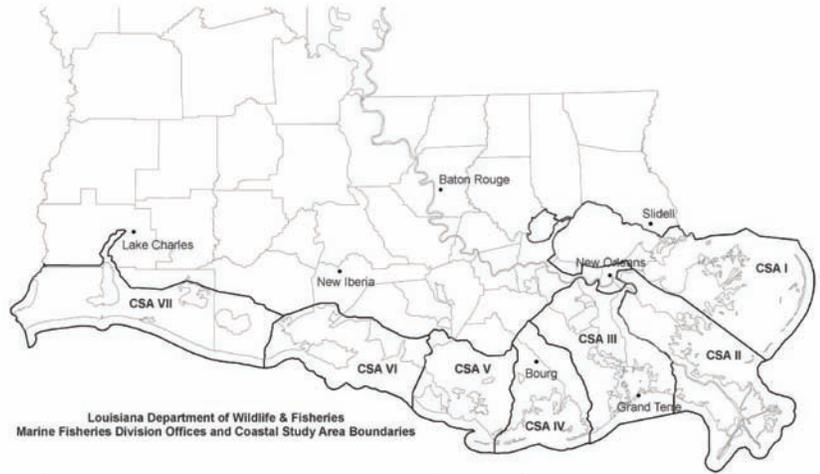
Fisheries Management Programs include Shellfish Management, Mollusc Management and Finfish Management. In addition to headquarter operations, division responsibilities are conducted through seven coastal study areas and the Lyle S. St. Amant Marine Laboratory (*FIGURE 1*).

### SHELLFISH MANAGEMENT

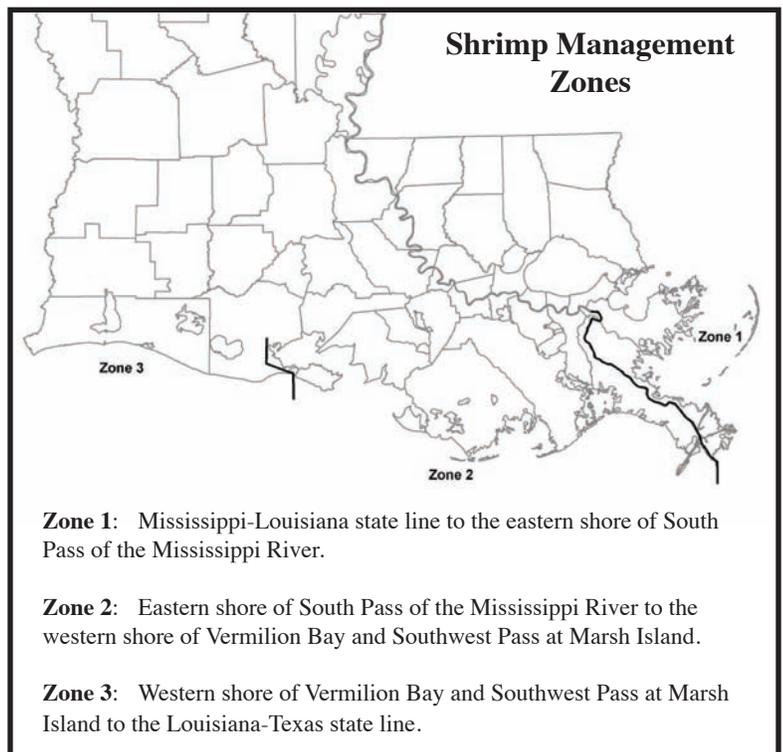
The Marine Fisheries Division continued its long-term trawl sampling program throughout coastal Louisiana. Fishery biologists collected 773 six-foot trawl and 1,379 16-foot trawl samples from both inshore and offshore waters in each of the seven coastal study areas. Data from these samples were used to recommend season frameworks for both the fall and spring inshore shrimp seasons and winter territorial sea shrimp seasons. These same data were also used to recommend season extensions and special seasons and provide recruitment indices for Gulf menhaden and blue crabs.

### Shrimp

Shrimp are this state's most valuable commercial fishery and Louisiana continues to lead the nation in shrimp landings. Louisiana shrimp landings in 2007 totaled approximately 70.4 million pounds (all species combined/heads-off weight) and accounted for \$139.3 million in dockside sales. Brown shrimp landings comprised approximately 40 percent of 2007 landings and have continued to decline over the past three years, measuring 3.5 million pounds



**FIGURE 1.** Marine Fisheries Division Coastal Study Areas



**FIGURE 2.** Louisiana Shrimp Management Zones

below the long-term mean (1976-2007). Conversely, white shrimp landings over the past five years continued to exceed the long-term mean. Although declining 15 million pounds from the previous year, 2007 white shrimp landings measured 40.5 million pounds or about 9.5 million pounds above the long-term mean.

Due to significant differences in patterns of shrimp recruitment, growth and immigration between geographic areas, the Louisiana coast has been divided into three Shrimp Management Zones to better manage the resource. Shrimp management recommendations are listed by zone in *FIGURE 2*.

### Shrimp Management Recommendations

Based upon analysis of historic data as well as data generated from biological sampling conducted by LDWF, the following management practices were implemented during the report period: sample data were used to set

the opening and closing dates of the 2007 Spring Inshore Shrimp Season; set opening and closing dates of the 2007 Fall Inshore Shrimp Season; extend inshore seasons in portions of inside waters; and close and then reopen to shrimping portions of Louisiana outside territorial waters.

### ***Shrimp Management Zone I***

#### ***2007 - Spring Inshore Shrimp Season***

- Opened at noon on May 28, 2007 including the open waters of Breton and Chandeleur sounds as described by the "double-rig line" in LA R.S. 56:495.1(A)2.
- Zone I closed at 6:00 p.m. on July 16, 2007 except for the open waters of Breton and Chandeleur sounds as described by the "double-rig line."
- The open waters of Breton and Chandeleur sounds remained open to shrimping until 6:00 a.m. March 31, 2008.

#### ***2007 - Fall Inshore Shrimp Season***

- Opened at noon on Aug. 13, 2007
- Zone I closed Dec. 18, 2007 at official sunset except for the open waters of Breton and Chandeleur sounds as described by the "double-rig line" which remained open to shrimping until 6:00 a.m. March 31, 2008.

#### ***2008 - Spring Inshore Shrimp Season***

- Opened at noon on June 2, 2008 including the open waters of Breton and Chandeleur sounds as described by the "double-rig line."
- Closed July 1, 2008 at 6:00 p.m. except for those portions of Zone I including Lake Pontchartrain, Rigoletes Pass from the mouth of Lake Pontchartrain extending eastward to the western side of the CSX Railway Bridge, Chef Menteur Pass from the mouth of Lake Pontchartrain southeasterly to the mouth of Lake Borgne, the Mississippi River Gulf Outlet (MRGO) beginning at its juncture with the Industrial Canal, that portion of Mississippi Sound beginning at a point on the Louisiana-Mississippi Lateral Boundary at latitude 30 degrees 09 minutes 39.6 seconds north and longitude 89 degrees 30 minutes 00 seconds west; thence southeasterly to a point at latitude 30 degrees 03 minutes 12 seconds north and longitude 89 degrees 21 minutes 30 seconds west; thence northeasterly to the most easterly point on Isle Au Pitre at latitude 30 degrees 09 minutes 20.5 seconds north and longitude 89 degrees 11 minutes 15.5 seconds west, which is a point on the double-rig line as described in LA R.S. 56:495.1(A)2; thence northerly along the double-rig line to a point on the Louisiana-Mississippi Lateral Boundary at latitude 30 degrees 12 minutes 37.9056 seconds north and longitude 89 degrees 10 minutes 57.9725 seconds west; thence westerly along the Louisiana-Mississippi Lateral Boundary to the point of beginning and the open waters of Breton and Chandeleur sounds as described by the "double-rig line."

### ***Shrimp Management Zone II***

Offshore territorial waters south of the inside/outside shrimp line from the eastern shore of Freshwater Bayou Canal at 92 degrees 18 minutes 33 seconds west longitude to the USCG navigational light off the northwest shore of Caillou Boca at 29 degrees 03 minutes 10 seconds north

latitude and 90 degrees 50 minutes 27 seconds west longitude were closed to shrimping at 6:00 a.m. on December 18, 2007.

Offshore territorial waters south of the inside/outside shrimp line and east of the Atchafalaya River Ship Channel at Eugene Island as delineated by the river channel red buoy line to the USCG navigational light off the northwest shore of Caillou Boca at 29 degrees 03 minutes 10 seconds north latitude and 90 degrees 50 minutes 27 seconds west longitude reopened to shrimping April 15, 2008 at noon.

Offshore territorial waters south of the inside/outside shrimp line and west of the Atchafalaya River Ship Channel at Eugene Island as delineated by the river channel buoy line to the western shore of Freshwater Bayou Canal at 92 degrees 18 minutes 33 seconds west longitude reopened to shrimping at noon on May 12, 2008.

#### ***2007 - Spring Inshore Shrimp Season***

- Opened at noon on May 14, 2007
- Closed at 6:00 a.m. on June 25, 2007 except for that portion of Zone II extending from the Atchafalaya River Ship Channel at Eugene Island as delineated by the channel red buoy line to the eastern shore of South Pass of the Mississippi River.
- That portion of Zone II extending from the western shore of Bayou Lafourche westward to the Atchafalaya River Ship Channel at Eugene Island as delineated by the channel red buoy line closed at 6:00 p.m. on June 30, 2007.
- The remaining portion of Zone II extending from the western shore of Bayou Lafourche to the eastern shore of South Pass of the Mississippi River closed at 6:00 p.m. on July 6, 2007.

#### ***2007 - Fall Inshore Shrimp Season***

- Opened at noon on Aug. 13, 2007.
- Closed at official sunset on Dec. 18, 2007.

#### ***2008 - Spring Inshore Shrimp Season***

- Opened at noon on May 12, 2008.
- That portion of Zone II extending from the Atchafalaya River Ship Channel at Eugene Island as delineated by the channel red buoy line to the western shore of Bayou Lafourche closed on at 6:00 p.m. June 24, 2008.
- The remaining portions of Zone II extending from the Atchafalaya River Ship Channel at Eugene Island as delineated by the channel red buoy line to the western shore of Vermilion Bay and Southwest Pass at Marsh Island and those waters from the western shore of Bayou Lafourche to the eastern shore of South Pass of the Mississippi River closed at 6:00 p.m. on June 30, 2008.

### ***Shrimp Management Zone III***

#### ***2007 - Spring Inshore Shrimp Season***

- Opened at noon on May 28, 2007.
- Closed at 6:00 a.m. on June 30, 2007 except for that portion of the Calcasieu Ship Channel originating at a line between Channel Markers 85 and 86 southward to a point originating along the inside/

outside shrimp line at Calcasieu Pass as described in LA R.S.56:495(A) and including East Pass from its origin at the Calcasieu Ship Channel to the south end of Calcasieu Lake and West Pass from its origin at the Calcasieu Ship Channel to the south end of West Cove.

- The remaining portion of Zone III including the Calcasieu Ship Channel originating at a line between Channel Markers 85 and 86 southward to a point originating along the inside/outside shrimp line at Calcasieu Pass as described in LA R.S.56:495(A) and including East Pass from its origin at the Calcasieu Ship Channel to the south end of Calcasieu Lake and West Pass from its origin at the Calcasieu Ship Channel to the south end of West Cove closed at 6:00 p.m. July 7, 2007.

*2007 - Fall Inshore Shrimp Season*

- Opened at noon on Aug. 6, 2007
- Closed at official sunset on Dec. 18, 2007

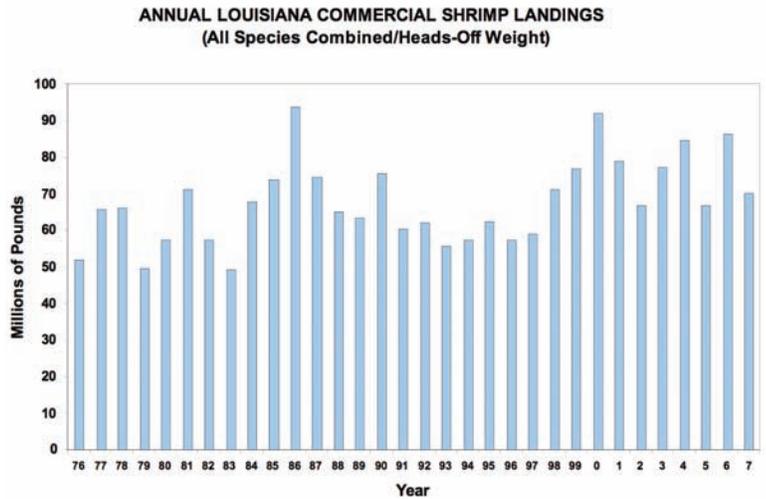
*2008 - Spring Inshore Shrimp Season*

- Opened at noon on June 2, 2008
- Closed at 6:00 p.m. on July 1, 2007 except for that portion of the Calcasieu Ship Channel originating at a line between Channel Markers 85 and 86 southward to a point originating along the inside/outside shrimp line at Calcasieu Pass as described in LA R.S.56:495(A) and including East Pass from its origin at the Calcasieu Ship Channel to the south end of Calcasieu Lake and West Pass from its origin at the Calcasieu Ship Channel to the south end of West Cove.
- That portion of the Calcasieu Ship Channel as described above remained open to shrimping through the end of the 2008 Fall Inshore Shrimp Season.

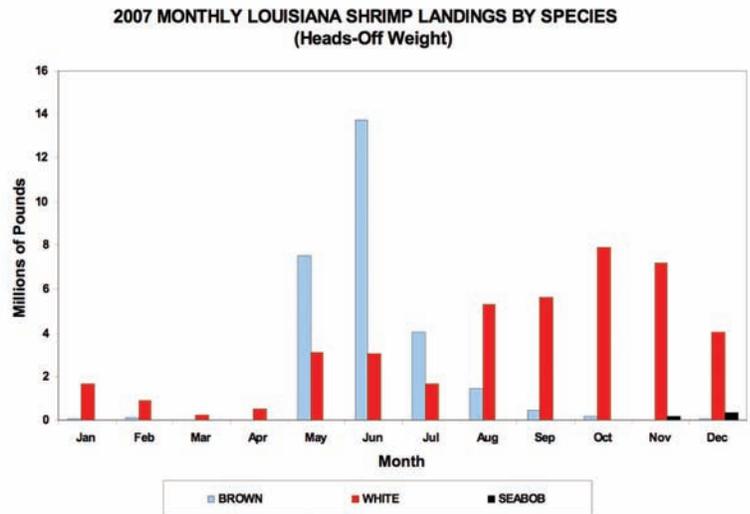
Commercial shrimp landings since 1976 have ranged from a high of 93.7 million pounds (heads-off weight/all species combined) reported in 1986 to 49.4 million pounds landed in 1983 (**FIGURE 3**). Brown shrimp landings in 2007 were greatest during May, June and July while white shrimp production peaked in October at nearly 8 million pounds. Seabob landings were highest during late fall and early winter (**FIGURE 4**).

**Federal Aid Projects**

The Marine Fisheries Division has also continued the administration of a \$148,298 federal grant (Interjurisdictional Assessment and Management of Louisiana Coastal Fisheries -NOAA/DOC Award No. NA07NMF4070050). The objective of the Interjurisdictional Fisheries Project is to maintain a coast-wide monitoring program for parameters relevant to important fisheries resources, including both population dynamics and associated hydrological and environmental parameters, and to use information gathered to make rational management decisions. Technical, biological and hydrological data gathered from the monitoring program were utilized in establishing seasonal frameworks within the shrimp and oyster fisheries, predicting annual gulf menhaden (*Brevoortia patronus*) abundance and providing data for the management of groundfishes and blue crabs (*Callinectes sapidus*). These data have provided estimates of size, density and growth



**FIGURE 3.** Louisiana Commercial Shrimp Landings



**FIGURE 4.** Louisiana Monthly Shrimp Landings by Species

of juvenile penaeid shrimp on the nursery grounds and staging areas, movement of sub-adult shrimp from the nursery grounds to staging areas, and the abilities to correlate juvenile shrimp response and subsequent production to hydrologic conditions. Data collected from the monitoring program were crucial in establishing opening and closing dates for shrimp seasons within Louisiana inside and outside territorial waters during fiscal year 2007-2008. Hydrological and biological data collected on oyster recruitment (spat set) and oyster density and availability estimates were used in formulating management recommendations regarding the oyster season on the public oyster seed grounds and seed reservations. Harvest estimates were determined from boarding report surveys of boats fishing the public seed grounds and seed reservations. These data were compared with annual stock availabilities and previous production estimates calculated during the fiscal year.

**Crabs**

Louisiana commercial blue crab landings for 2007 totaled approximately 43.9 million pounds and had a dockside

value of approximately \$44.8 million. Blue crab landings in 2007 represent a 16 percent decrease from 2006 landings of approximately 52.4 million pounds (**FIGURE 5**). A major issue in the fishery is the low prices associated with increased foreign imports of crabmeat.

Stone crab landings for 2007 were 4,253 pounds valued at \$11,417 dockside. The stone crab fishery in Louisiana is not a directed fishery and stone crabs are primarily taken as incidental bycatch within the blue crab fishery. Variations in annual stone crab landings are primarily due to salinity levels with higher abundance associated with dry years.

The major LDWF activity related to blue crabs in fiscal year 2007-2008 was the removal of derelict crab traps from coastal waters under the Abandoned Crab Trap Removal Program. Legislation introduced by LDWF in 2003 gave the Louisiana Wildlife and Fisheries Commission the authority to establish a derelict crab trap removal program.

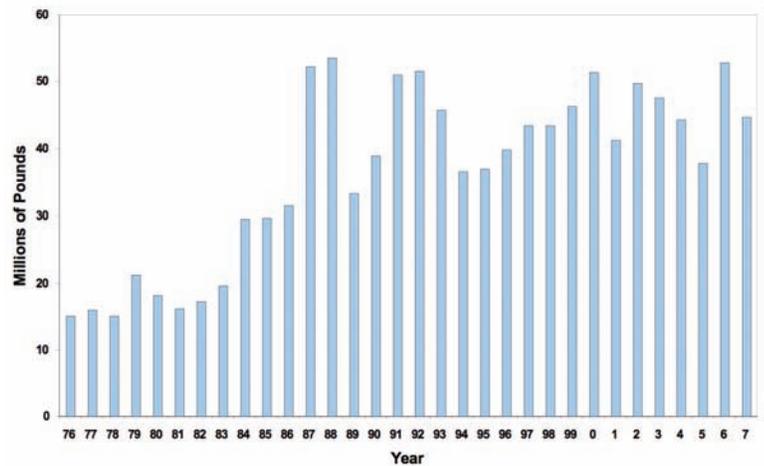
The following portion of Terrebonne Parish was closed to the use of crab traps over a 10-day period extending from 6:00 a.m. on Feb. 23, 2008 through 6:00 a.m. March 3, 2008.

From a point originating along the western shoreline of Cut Off Canal at its intersection with Grand Bayou, thence southward along the western shoreline of Cut Off Canal to its intersection with the boundary of the Pointe au Chenes WMA, thence west along the southern boundary of the Pointe au Chenes WMA to the Humble Canal, thence west along the northern shoreline of Humble Canal to its intersection with Bayou Terrebonne, thence south along the western shoreline of Bayou Terrebonne to its intersection with Bush Canal, thence west along the northern shoreline of Bush Canal to its intersection with Bayou Little Caillou, thence south along the western shoreline of Bayou Little Caillou to 29 degrees 17 minutes 00 seconds north latitude, thence east along 29 degrees 17 minutes 00 seconds north latitude to the eastern shoreline of Bayou Pointe au Chenes, thence north along the eastern shoreline of Bayou Pointe au Chenes to the eastern shoreline of Cut Off Canal, thence north along the eastern shoreline of Cut Off Canal to its intersection with the southern shoreline of Grand Bayou, thence west across Cut Off Canal and terminating at the point of origin at the western shoreline of Cut Off Canal at its intersection with Grand Bayou.

A total of 1,234 derelict crab traps were collected during the 2008 clean up. There were three volunteer boats participating.

A total of 17,184 derelict crab traps have been removed from Louisiana coastal waters during the first five years of crab trap cleanups (**TABLE 17**). Volunteer effort was 191+ boat-days; not included is effort by LDWF.

**LOUISIANA COMMERCIAL BLUE CRAB LANDINGS**



**FIGURE 5.** Louisiana Commercial Blue Crab Landings

**TABLE 17.** Derelict Crab Trap program

Year	Traps	Boat Days*
2004	6,894	90+
2005	4,623	51+
2006	2,935	31
2007	1,498	14
2008	1,234	3
2004-2008	17,184	191+

\*Public volunteers only

The 2009 derelict crab trap removal program will deviate from the 2004-2008 format, which were volunteer based and associated with crab trap closures for fishermen within a defined geographical area and closure period as determined by the Wildlife and Fisheries Commission. Crab traps remaining in the closure area during the closure period were considered abandoned and could be retrieved by anyone.

The program format was changed because of the very low participation by volunteers in recent years, to reduce administrative costs and to lessen the impact on commercial crab fishermen.

The crab trap cleanups in 2009 will be accomplished by LDWF employees in areas selected by local Marine Fisheries field personnel in winter and early spring.

The Louisiana Crab Task Force has continued to meet and address issues that confront the industry. Legislation supported by the task force and approved during the spring 2008 legislative session established an out-of-state crab shipping fee with proceeds dedicated to promotion and marketing of the crab industry. The Crab Task Force also continues discussions on a variety of topics such as fisheries disaster relief, crab bait availability, impacts of crabmeat imports and legislation impacting the crab industry. The task force has also been planning an education day for state legislators.

### Special Bait Dealer Permit Program

A total of 42 special bait dealer permits were issued to licensed wholesale/retail seafood dealers for the sale of live bait shrimp during 2007. This report summarizes only those data collected on submitted catch reports. According to permit catch reports, a total of 1,243,141 live shrimp (*Farfantepenaeus aztecus* and *Litopenaeus setiferus*) and 248,381 Atlantic croaker (*Micropogonias undulatus*) were harvested by dealers during the permit period. The number of live shrimp harvested during the 2007 permit period represents a 70 percent increase from levels reported the previous year. The number of trips taken exceeded those reported following the 2006 permit period. In 2007, dealers reported a total of 751 trips taken during the permit period and sales of approximately 1,737 pounds of market shrimp.

Cameron Parish dealers led all dealers in the number of live shrimp harvested but were closely followed by dealers in St. Bernard Parish. Ranked in descending order, live shrimp harvests were next highest in Jefferson Parish, Plaquemines, Terrebonne, St. Tammany, Non-Resident, Orleans and Lafourche Parish. Dealers in Jefferson Parish led all in the number of trips taken (246) as well as in the number of croaker harvested (169,941).

Although the number of permits issued in 2007 was significantly higher than in 2006, changes to special bait dealer regulations ratified in 2007 may have accounted for the increased number of shrimp harvested. According to provisions in LAC: VII.329, the special bait dealer program now allows for the harvest of croaker and the optional use of skimmer nets to harvest live shrimp and croaker.

Assuming retail values of \$0.25 for live shrimp and \$0.30 for live croaker, the total estimated dockside value of live shrimp and croaker marketed by permitted bait dealers during the permit period was approximately \$310,785 and \$74,514 respectively. Retail sales of dead shrimp marketed by permittees contributed \$3,474 respectively.

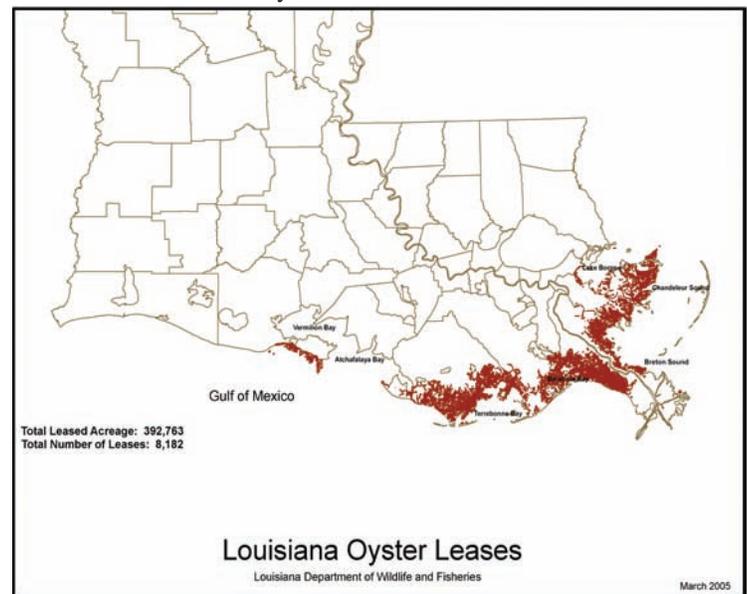
### MOLLUSC MANAGEMENT

The Mollusc Program manages the oyster resource on over 1.6 million acres of public oyster seed reservations, public seed grounds, public oyster areas and public tonging areas. Seed grounds are designated by the Wildlife and Fisheries Commission and include a large continuous area east of the Mississippi River, as well as areas of the Vermilion/Cote Blanche/Atchafalaya Bay system. Seed reservations, as well as the public oyster areas of Calcasieu and Sabine lakes, are designated by the legislature. LDWF manages four seed reservations, including one east of the Mississippi River (Bay Gardene), one in the Barataria Bay system (Hackberry Bay) and two in Terrebonne Parish (Sister Lake and Bay Junop).

The Calcasieu and Sabine Lake Public Oyster Areas previously restricted commercial harvest to tonging. However, a 2004 law change allowed for the use of hand dredges to harvest the oyster resources located in the lake beginning in the 2004-2005 oyster season. An additional

law change in 2005 allowed hand dredges to be fished with the aid of a mechanical assist. Poor water quality has prohibited harvest in Sabine Lake for many years due to public health concerns, and all oyster harvest in the southwest portion of Louisiana comes from Calcasieu Lake. Mechanical dredge harvest in Calcasieu Lake mirrors the dredge harvest in other parts of the state with the exception of dredge size. Calcasieu dredges are limited to 36 inches in width while dredges used in other parts of the state are allowed to be as wide as six feet. Seed grounds and reservations are managed with the goal of providing seed oysters for transplant onto private oyster leases (FIGURE 6). However, two "Sacking Only Areas" exist east of the Mississippi River for the exclusive harvest of sack-sized oysters: 1) portions of Lake Fortuna and Lake Machias, and 2) American/Long Bay.

FIGURE 6. Louisiana Oyster Leases



Six additional public grounds were designated in 2000 to be developed for oyster production. These grounds include portions of Barataria Bay, Deep Lake, Lake Felicity, Lake Chien, Lake Tambour and Lake Mechant. Initial site selection for new reefs in these areas was completed in 2002-2003 by utilizing side-scan sonar technology to analyze water bottoms. Barataria Bay, Lake Chien, Lake Felicity and Lake Mechant were chosen as locations for reef-building activities in fiscal year 2004 funded by the federal government through the Coastal Impact Assistance Program. This project placed roughly 35,000 cubic yards of crushed concrete and limestone rock on suitable water bottoms in these areas in May/June 2004. Biological monitoring of the new reefs began immediately and continued through fiscal year 2007-2008. Biological sampling showed the presence of a sizeable oyster resource on each of these new reefs prior to hurricanes Katrina and Rita, but heavy oyster mortalities at these locations following the storms were documented by LDWF biologists. Biological sampling in July 2007 showed harvestable quantities of oysters on these reefs and allowed for a short, three-day oyster harvesting season on some of these reefs during the 2007-2008 oyster season.

Additional reef building projects were the result of a federal disaster grant secured by LDWF following Hurricane Lili and Tropical Storm Isidore in September/October 2002. Reef building activities in Hackberry Bay and Sister Lake were planned and carried out in May/June 2004. Over 20,000 cubic yards of cultch material were placed on suitable water bottoms in Hackberry Bay and Sister Lake. Biological monitoring began immediately after cultch planting and continued through July 2007. These reefs also experienced heavy mortalities following the hurricanes of 2005, but showed signs of rebounding as large amounts of seed oysters were documented to be present on the reefs in 2007. These reefs were heavily utilized by the oyster industry during the 2007-2008 oyster season, especially the reef located in Sister Lake.

Additional cultch planting projects initiated in fiscal years 2006-2007 and 2007-2008 are reported on in the "Hurricanes of 2005" section of this report. These newly constructed reefs are currently being monitored with plans to open them for harvest in future years.

Oysters provide an economic benefit to the state, and the ecological benefits of oyster reefs are very important as well. Oysters are biomonitors of the overall health of the ecosystem and provide forage and shelter habitat for a variety of fish and invertebrate species. Oysters also affect water quality through filter-feeding activities, affect estuarine current patterns and may provide shoreline stabilization. Because oysters are so economically and ecologically important, wise management of the public oyster resource is critically important to ensure that this valuable species continues to thrive in Louisiana's coastal areas.

Statutory provisions mandate that LDWF open the oyster season on Louisiana public seed grounds on the first Wednesday following Labor Day of each year and close these areas no later than April 30 of each year. However, the Louisiana Wildlife and Fisheries Commission is authorized to extend the season beyond April 30 provided sufficient stocks are available for harvest. The Secretary of the LDWF may close seasons on an emergency basis if oyster mortality occurs, or delay the season or close areas where significant spat catch has occurred with good probability of survival, or if excessive amounts of shell in seed oyster loads occur. Management practices often use rotational openings of the four Oyster Seed Reservations in alternating years. A law change during the 2008 Louisiana Legislative Session requires that the public grounds only be opened to the taking of seed oysters between the first Wednesday following Labor Day and the second Monday in October. The seed grounds can then be opened to the taking of market-size oysters on the second Monday in October, in addition to the taking of seed oysters.

Management of the public oyster grounds and reservations (FIGURE 7) relies heavily upon data gathered through a comprehensive monitoring program. This program provides quantitative and qualitative data on oyster populations and other reef-associated animals. Approximately 190 square-meter samples are collected each July and over 150 dredge samples are collected from

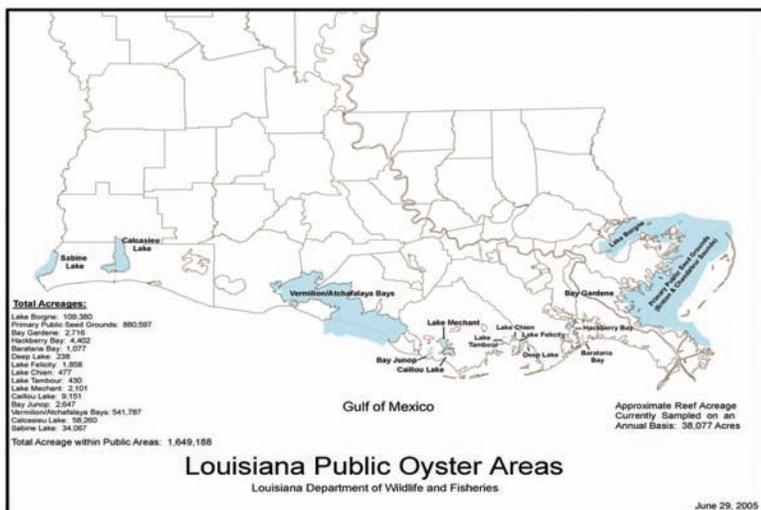
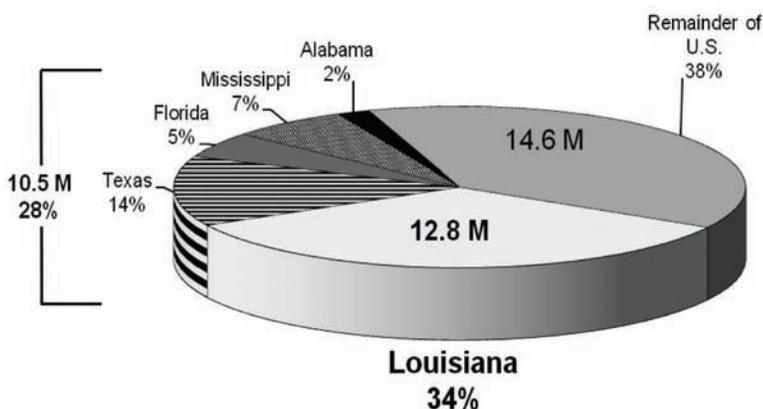


FIGURE 7. Louisiana Public Oyster Areas

### Average 1997 - 2006 Oyster Landings (all species combined, pounds of meat)



Data source: NMFS

FIGURE 8. 2006 landings of Eastern oysters (*Crassostrea virginica*) in pounds of meat.

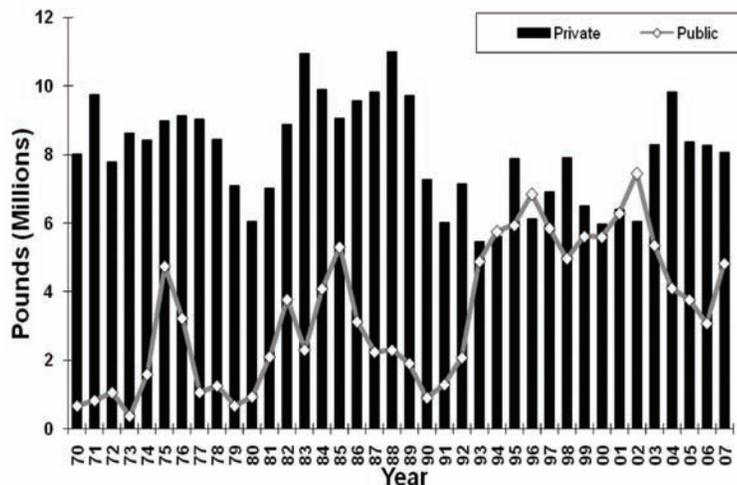


FIGURE 9. Historical Louisiana oyster landings (pounds of meat) divided between public grounds and private leases.

**TABLE 18.** 2007-2008 Oyster season dates

Public Oyster Areas	Season Opening	Season Closure
Lake Borgne Public Oyster Seed Ground and that portion of the Primary Public Oyster Seed Grounds east of the Mississippi River bordered on the north by the Mississippi-Louisiana state line and on the south by the Mississippi River Gulf Outlet (MRGO)	Sept. 5, 2007	Sept. 21, 2007
	Nov. 12, 2007	Apr. 1, 2008
	Apr. 13, 2008	Apr. 26, 2008
That portion of the Primary Public Oyster Seed Grounds east of the Mississippi River bordered on the north by the MRGO and on the south by the Mississippi River and North Pass including the sacking only area of the public grounds which is generally Lake Fortuna and Lake Machias to a line from Mozambique Point to Point Gardner to Grace Point at the MRGO	Sept. 5, 2007	Sept. 21, 2007
	Nov. 12, 2007	Apr. 1, 2008
Bay Gardene Public Oyster Seed Reservation	Sept. 5, 2007	Sept. 21, 2007
	Nov. 12, 2007	Apr. 1, 2008
Little Lake Public Oyster Seed Ground	Sept. 5, 2007	Sept. 21, 2007
	Nov. 12, 2007	Apr. 1, 2008
Sister Lake Public Oyster Seed Reservation	Nov. 12, 2007	Nov. 19, 2007
	Feb. 11, 2007	Feb. 29, 2008
Lake Mechant Public Oyster Seed Ground	Oct. 24, 2007	Oct. 29, 2007
Vermilion, East and West Cote Blanche and Atchafalaya Bay Public Oyster Seed Ground	Sept. 5, 2007	Apr. 1, 2008
Calcasieu Lake Public Oyster Area	West: Oct. 15, 2007	Apr. 30, 2008
	East: Nov. 1, 2007	Apr. 30, 2008
Hackberry Bay Public Oyster Seed Reservation	Sept. 5, 2007	Sept. 21, 2007
Lake Chien Public Oyster Seed Ground	Oct. 24, 2007	Oct. 26, 2007
Lake Felicity Public Oyster Seed Ground	Oct. 24, 2007	Oct. 26, 2007
Lake Tambour Public Oyster Seed Ground	Season Remained Closed	
Barataria Bay Public Oyster Seed Ground		
Deep Lake Public Oyster Seed Ground		
Sabine Lake Public Tonging Area		
Bay Junop Public Oyster Seed Reservation		

March through October. Square-meter data are collected using SCUBA and the data are used to measure the annual oyster stock size and for yearly season recommendations by LDWF. Dredge data are used to monitor the overall health of the oyster resource during the year and to assess recruitment of new age classes of oysters into the population. Field biologists also gather hydrological data on public oyster areas and develop harvest and fishing effort estimates by conducting boarding report surveys of oyster boats.

Unequaled in oyster production over recent years, Louisiana consistently produces one of the most abundant and valuable oyster resources in the nation. Averaging nearly 14 million pounds per year, Louisiana accounted for approximately 58 percent of all Gulf of Mexico oysters, and was responsible for over one-third of all oysters landed in the United States between 1997 and 2006 (FIGURE 8).

The importance of the oyster resource to Louisiana's economy is evident as Louisiana commercial oyster landings had a dockside value of nearly \$40.2 million in 2007. This valuable resource is harvested from a variety of locations from bays to bayous and throughout the coast of the state. Oyster landings in Louisiana are divided between harvest from public oyster areas and private oyster leases.

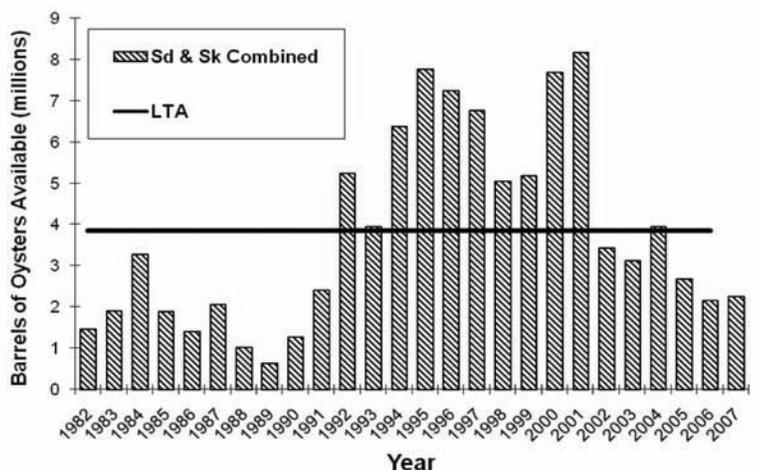
The oyster season on the public grounds generally runs from September to April (TABLE 18), but may be extended only after approval by the Louisiana Wildlife and Fisheries Commission. In 2007, the oyster season opened for a short time in September, and then closed until early November when it reopened until April 1, 2007. Historically, landings from private leases have comprised between 60 percent and 80 percent of annual Louisiana oyster landings, and in 2007 nearly 63 percent of all oysters harvested in Louisiana came from private leases. Although the majority of oyster landings in recent years have come from private leases, the public oyster grounds continue to significantly contribute to annual oyster landings as landings in 2007 measured approximately 4.8 million pounds of oyster meat (FIGURE 9). Much of the oyster production from private leases is dependent upon small seed oysters (less than three inches) transplanted from the public grounds to the leases for grow-out purposes.

In 2007, biological sampling estimated that over 2.3 million barrels of oysters (both seed and sack combined) were available on the public oyster grounds throughout the state. This represented a slight overall increase over 2006 levels (FIGURE 10)

**Oyster Leasing**

The moratorium on the issuance of new oyster leases, at the request of LDNR, remained in effect throughout fiscal year 2007-2008. The moratorium was requested in order to reduce the state's liability related to coastal restoration efforts. This moratorium does not affect lease renewals and 568 renewal applications were processed.

On Dec. 1, 2007, the Oyster Lease Survey Section moved



**FIGURE 10.** Annual oyster stock size on the public oyster grounds as estimated from biological sampling.

from Jackson Barracks into offices at the UNO Advanced Technology Center, 2021 Lakeshore Drive, Suite 400. The section continues to maintain a website, which provides information to the public about oyster leasing in Louisiana. This new website contains a searchable Geographic Information System (GIS) with background maps and LDHH closure line with a database of current leases, landings and harvest statistics, and recent news articles about oysters. The website has had thousands of visits since it was developed and placed on the web in March 1998, and is available at: <http://204.196.151.247/oyster>.

## **FINFISH MANAGEMENT**

The primary objective of the finfish program is to make rational recommendations for the management of coastal finfish stocks based on a database of scientific information. The information in the database is collected through fishery independent and fishery dependent sampling. These programs are cooperative with NMFS and the Gulf States Marine Fisheries Commission. The fishery independent monitoring program is an ongoing collection of data by LDWF biologists in the field conducting surveys designed to sample coastal waters in an objective manner. Such surveys collect information based on geographic ranges independent of commercial or recreational fishing operations. The Marine Fisheries Division fishery dependent monitoring program collects information from fishers, processors and observers based on methods developed by NMFS for similar programs.

### **Fishery Independent Monitoring**

A comprehensive monitoring program was developed in 1985 to protect or enhance these valuable resources by providing information regarding the status of fish stocks that occur in the coastal waters of Louisiana at some time during their life cycle. Three gear types are used coast wide to sample various year classes of estuarine dependent fish.

A bag seine is used to sample young of the year and provide information on growth and movement. A gill net is used to sample juvenile, sub-adult and adult fish and provides information on relative abundance, year class strength, movement and gonad condition. A trammel net is used to provide information on relative abundance, standing crop and movement. Gill net samples are collected semi-monthly from April through September, and monthly from October through March using a strike net technique. The gill nets are set in a crescent shape, open towards the shoreline and then circled several times by the sampling boat, driving those animals present into the net. Trammel net samples are taken monthly from October through March. Seine samples are taken monthly from January through August, and semi-monthly from September through December. Hydrological readings (conductivity, salinity and water temperature) are collected with each biological sample, as are wind direction and speed. Samples are collected at specific locations arranged in such a manner so as to cover the beach, mid-marsh and upper marsh areas of all major bay systems throughout coastal Louisiana. The catch and hydrological information is summarized for each Coastal Study Area on a monthly

basis to give resource managers information on the current condition of the resource. The pertinent life history information for the important species is also used in developing analytical and predictive models. During fiscal year 2007-2008, 848 (99 percent) seine samples, 968 (99 percent) gill net samples, and 241 (98 percent) trammel net samples were completed for a 99 percent completion rate.

Management recommendations based upon these observations and other information are listed below.

### **2007-2008 Finfish Management Actions, Impacts and Recommendations**

#### **July 2007**

- Commercial large coastal shark second trimester season opened on July 1 at 12:01 a.m.
- Commercial king mackerel season opened on July 1 at 12:01 a.m.

#### **September 2007**

- Commercial large coastal shark season closed on Sept. 22 at 11:30 p.m.

#### **October 2007**

- Recreational red snapper season closed on Oct. 31 at midnight.

#### **November 2007**

- Commercial king mackerel season closed on Nov. 7 at noon.

#### **January 2008**

- Secretary provided with authority to close commercial seasons of reef fishes if quota for species group is filled in federal waters.
- Set 2008 king mackerel commercial season, provide Secretary with authority to close commercial season for king mackerel if quota for species is filled in federal waters.
- Commercial large coastal shark first season closure extended until promulgation of new rules for adjacent federal waters.

#### **February 2008**

- Present 2008 stock assessments for striped mullet, black drum, southern flounder and sheepshead.
- Modify landing and offloading rules for commercial red snapper under IFQ harvest system.

#### **March 2008**

- Vermilion snapper minimum size limit reduced from 11 inches to 10 inches total length, the 10 fish recreational bag limit restriction within the existing 20-fish aggregate reef fish bag limit is eliminated, and the 40-day commercial closure eliminated.

#### **April 2008**

- Recreational shark season closed until June 30.

#### **May 2008**

- Commercial fisheries for deepwater groupers and tilefishes closed at 12:01 a.m.

The programs on Fishery Management interact with other department, state, regional and national issues. The program contributes to the Gulf and Atlantic Aquatic Invasive Species Task Force that engenders cooperation on these issues for states from South Carolina to Texas and Mexico. It is also part of the Louisiana Aquatic Invasive

Species Task Force. It works with the Gulf of Mexico Fishery Management Council Stock Assessment Panel to evaluate the status of fish stocks managed by the Council. It works with GSMFC to develop fishery management plans and stock assessments for state-managed fisheries that have inter-jurisdictional management considerations. The program also contributes to LDWF consideration on permitting issues that relate to finfish including coastal use permits, Liquefied Natural Gas (LNG) terminals, mariculture and artificial reefs.

### Fishery Dependent Monitoring

The value of commercial landings in Louisiana exceeded \$290 million (**FIGURE 11**) in 2007, a \$19.0 million increase from the 2006 landings year. LDWF continues to collect commercial statistics through the Trip Ticket Program that was implemented in 1999. Through this program, commercial landings data are collected on a trip basis from wholesale/retail seafood dealers, crab shedders and commercial fishermen holding fresh products licenses. There were over 242,543 commercial fishing trips reported in 2007 producing nearly 1.0 billion pounds of seafood (**TABLE 19**). Landings in 2007 are up from 2006 due to the continued recovery of the commercial fishing industry from the impacts of hurricanes Katrina and Rita in 2005.

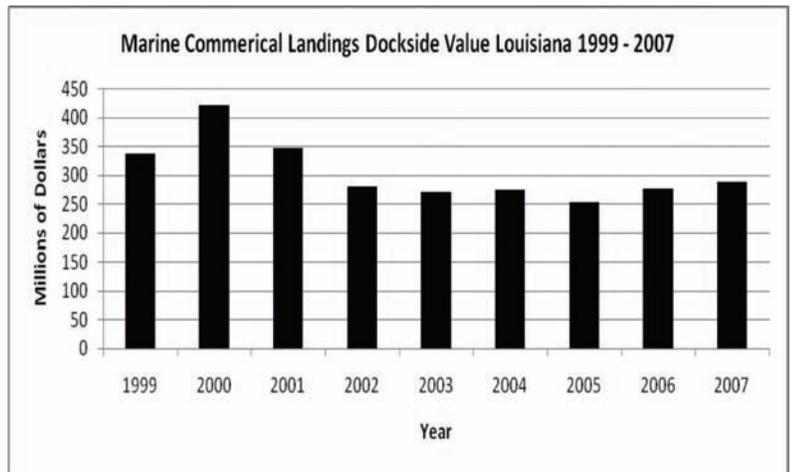
Starting in May 2000 an electronic trip ticket program was developed and made available to dealers. To date, roughly 110 dealers utilize the computerized program and submit their trip ticket data to LDWF electronically. Trip ticket information has been used to enhance the accuracy of stock assessments conducted by state and federal fishery management agencies, and to estimate damages from hurricanes Katrina and Rita in 2005.

The 2007 landings data have been completed and are available to continue the analysis of recovery monitoring.

Along with the collection of commercial landings data, LDWF also conducts trip interviews of commercial fishermen. Biologists interview commercial fishermen to gather detailed information about a specific fishing trip. The federally funded program focuses on species of greatest state and federal interest.

LDWF, in conjunction with other states along the Gulf of Mexico and NMFS, began a new program in 2002 for the collection of biostatistical information. Biostatistical samples, such as otoliths used to determine a fish's age, are collected from both the commercial and recreational fishery. Otoliths are sectioned and read by LDWF personnel to determine a fish's age much like reading the rings of a tree. Over 9,600 otoliths were collected during 2006-2007 in Louisiana. The program will continue to improve the information used in stock assessments and improve the accuracy of the results.

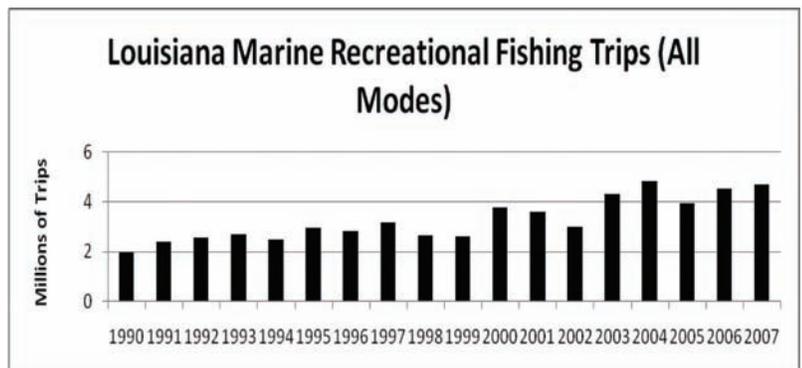
LDWF continues to monitor recreational fisheries through the Marine Recreational Fisheries Statistics Survey (MRFSS) in cooperation with NMFS and GSMFC. This fisheries dependent program is achieved through dockside



**FIGURE 11.** Commercial Landings Value

**TABLE 19.** 2007 Marine commercial landings

Species	Landings (lbs)	Value (\$)
Crabs	44,869,274	\$34,945,882
Freshwater Fish	12,351,568	\$5,283,813
Menhaden	789,620,750	\$41,367,975
Oyster	12,872,269	\$40,192,679
Saltwater Fish	12,639,335	\$19,450,843
Shrimp	110,864,384	\$40,192,679
Wild Crawfish	15,802,473	\$9,010,856



**FIGURE 12.** Marine Recreational Fishing Trips

interviews of recreational anglers to determine catch and a telephone survey to determine effort. The MRFSS survey in Louisiana reported over 4.6 million marine recreational fishing trips were taken by approximately 1.2 million anglers in 2007 (**FIGURE 12**). This was an increase of 1.0 million marine recreational fishing trips from 2006. In 2007, marine recreational anglers caught approximately 18.7 million spotted sea trout and 6.1 million red drum in Louisiana waters.

A draft log-book was developed and modified to a survey format to collect hurricane impacts on the economics and business aspects of the for-hire industry. The draft has been circulated for in-house comment and those recom-

mendations are being compiled into the survey. A meeting was held with the Louisiana Charter Boat Association (LCBA) to present the survey objectives and concepts. The LCBA agreed to help form a focus group to help finalize the survey.

Southwick Associates (2002), using data collected for the "2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation" (U.S. Department of the Interior, 2002), estimated that Louisiana saltwater anglers (resident and non-resident) spent approximately \$410 million in 2001 for fishing trip expenses, equipment and other expenses, with a total economic impact in Louisiana's economy of approximately \$746 million. They also estimated that this supported approximately 7,800 jobs in the state.

#### **Finfish Stock Assessments**

Division personnel updated stock assessments for black drum, striped mullet, southern flounder and sheepshead in fiscal year 2007-2008.

#### **Lyle S. St. Amant Marine Biological Research Laboratory**

The Marine Laboratory, located on Grand Terre Island, has a primary mission is to conduct the research required to manage Louisiana's marine fisheries. The laboratory is made available for the use of other LDWF and non-LDWF entities engaged in fisheries management, enforcement, coastal restoration and marine education, and serves as headquarters of Coastal Study Area III in the Barataria Bay estuarine system. The marine laboratory also supports the monitoring of the Freeport Sulfur Mine Reef for the Louisiana Artificial Reef Program.

The Grand Terre facility was heavily damaged by hurricanes Katrina and Rita in 2005. Prior to those storms LDWF began developing plans to replace the facility with a state-of-the-art research laboratory on Grand Isle. Consequently, only cursory, emergency repairs were made to the Grand Terre facility in order to maintain basic operations. Cooperative research and educational programs were curtailed pending opening of the new Grand Isle facility during 2009.

#### **Federal Aid in Sport Fish Restoration**

The Federal Aid in Sport Fish Restoration Act, commonly referred to as the Dingell-Johnson Act, passed on August 9, 1950, and was modeled after the Pittman-Robertson Act to create a parallel program for management, conservation and restoration of fishery resources. The Sport Fish Restoration program is funded by revenues collected from the manufacturers of fishing rods, reels, lures, flies and artificial baits, who pay an excise tax on these items to the U.S. Treasury. An amendment to the Act in 1984 (Wallop-Breaux Amendment) added new provisions by extending the excise tax to previously untaxed items of sport fishing equipment.

Appropriate state agencies are the only entities eligible to receive grant funds. Each state's share is based 60 percent on its licensed anglers (fishermen) and 40 percent on its

land and water area. No state receives more than 5 percent or less than 1 percent of each year's total apportionment. The program is a cost-reimbursement program, where the state covers the full amount of an approved project then applies for reimbursement through Federal Aid for up to 75 percent of the project expenses. The state must provide at least 25 percent of the project costs from a non-federal source. During fiscal year 2007-2008, Louisiana used the marine share of its Sport Fish Restoration Funds in support of the following projects:

#### ***Marine Boating and Fishing Access***

This project continued development of marine boating and fishing access for recreational anglers. According to current federal regulations each state shall allocate at least 10 percent of each annual apportionment under Federal Aid in Sport Fish Restoration Act for recreational boating access facilities. All facilities constructed, acquired, developed, renovated or maintained (including those existing structures for which maintenance is provided) must be for the purpose of providing additional, improved or safer access of public waters for boating recreation as part of the state's effort for the restoration, management and public use of sport fish. It is an objective of LDWF to strengthen its ability to effectively meet the consumptive and non-consumptive needs of the public for marine fish resources.

#### ***Stock Assessment of Louisiana's Important Marine Finfishes, F-97***

High quality data for the stock assessment for various species are essential for making management decisions. This project will determine the spawning ratio of the major recreational saltwater finfish in order to comply with legislative mandates that regulatory action be taken when the Spawning Potential Ratio falls below 30 percent. The goal is to ensure that the stocks of these finfish are not over-fished. The spawning potential ratio will be determined using age, growth and fecundity. The LSU Coastal Fisheries Institute (LSUCFI) will assist with the analysis of samples. Marine Fisheries sampling crews obtain otoliths from important marine fish. Additional work is added as needed to address age, growth and reproductive biology of selected finfishes to support stock assessment efforts. This project started on July 1, 1999 and is an ongoing project. As of June 30, 2008, approximately 40 formal stock assessment reports have been completed as a result of this project.

#### ***Louisiana Marine Sport Fish Investigation, Laboratory Acquisition/Development, Southeast Louisiana, F-108***

This grant will be used to construct a new marine fisheries laboratory facility on a 7.8 acre tract in Grand Isle, La. Project planning started on Sept. 1, 2001. This new laboratory facility will replace the Lyle S. St. Amant Marine Biological Laboratory located on Grand Terre Island. The facility will consist of four buildings including a laboratory/office building, dormitory, workshop with a storage area and covered marina and finally a covered boat hoist.

Construction work began on Phase 2 of the project in October 2006 by Circle, Inc. Since that time, contractors

have completed dredging of the marina, installing the sheetpile walls and started grading the land. Phase 2 was completed in February 2008. Phase 1 of the project was awarded to Shaw Constructors who began construction on June 4, 2007. The contract time is 425 days. Shaw began compacting the building sites, establishing rough grades for the soil, installing plumbing and electrical lines and driving piles for the four buildings being constructed. Construction is expected to be completed in Spring 2009.

***Evaluating Sport Fish Use of Created Wetlands in the Atchafalaya Delta Project (Contracted to LSUCFI) F-107***

The Atchafalaya Delta is losing coastal wetlands, and the Coastal Wetlands Planning, Protection and Restoration Act provided funding to restore the wetlands. Dredge spoil from the river will be used to create new wetland habitat. Phases 1 and 2 of this project examined the suitability of this habitat for sport fish production. These data will be used in future planning efforts to optimize the creation of habitat for sport fish. Phase 3 will add sampling from the Wax Lake Delta to be used to compare altered and unaltered systems. This project was completed on June 30, 2008.

***Continuation of Identifying Essential Fish Habitats in Barataria Bay Project (Joint project with LSUCFI) F-106***

Objectives for Phases 1 and 2 of this project were to describe essential fish habitat using sidescan sonar, split beam hydro acoustics and stable isotope techniques. It also identified essential fish habitat in Barataria Bay and quantified its value to important sport fish species. These techniques yield data that can be used to address the protection and conservation of habitats important to marine, estuarine and anadromous finfish. Through a partnership, LDWF and LSU developed a monitoring program, established sampling protocols and conducted field sampling. The project identifies juvenile habitat use by sampling tissue and examining differences in isotopic composition. These data will be integrated together to provide marine fisheries managers with habitat use by various fish species. Phase 3 is titled "Can Pulsed-River Diversions Shift Ecological Baselines in Louisiana Estuarine Ecosystems?" Phase 3 was initiated to develop a better understanding of the relationship between wetland habitats and fisheries productivity in Louisiana and the efforts to maintain and restore both. Another objective of Phase 3 is to develop an explicit understanding of how higher trophic levels are affected by landscape and smaller-scale changes in wetlands topography and estuarine hydrology via direct collaboration and contemporaneous sampling with wetland scientists. This project is currently in the third phase of continuing research. Phase 1 started on Sept. 1, 2001 and was completed on Aug. 30, 2003. Phase 2 started on Nov. 1, 2003 and was completed on June 30, 2006. Phase 3 started on July 1, 2006 and is scheduled to be completed by June 30, 2009. Through June 30, 2008 approximately 85 percent of the overall project has been completed.

***An Analysis of Spotted Seatrout (*Cynoscion nebulosus*) Feeding Habits within Louisiana Bay Systems (Joint project with the University of New Orleans) F-123***

This project evaluated whether food web assemblages and trophic positions of sea trout differ among three distinct habitats using carbon and nitrogen stable isotope analysis and fatty acid analysis. This project was completed on June 30, 2008.

***Marine Sport Fish Tagging Study (Joint project with LSUCFI) F-124***

This three-year project will develop an alternative estimate of red drum escapement through a tagging study utilizing a diverse partnership among fisheries scientists and volunteer anglers. Angler education is an important component of this project. LSU is a funding and research cooperator. This project started on July 1, 2004 and was completed June 30, 2007. This project was continued for an additional three years, July 1, 2007 - June 30, 2010.

***Sport Fish Utilization of Artificial Reefs vs. Open Water Habitats (Joint project with LSUCFI) F-130-DR***

The purpose of this research was to gain understanding of differential habitat utilization and energetics of natural vs. manmade oyster reefs for selected fish species. The project will evaluate and document the value of limestone based inshore artificial oyster reefs as essential fish habitat for important marine sport fish species, associated forage species and benthic invertebrate colonizing species. This project was completed on Dec. 31, 2007.

***Fisheries and Habitat Assessment of Bayou St. John, Restoring a Historic Urban Sport Fishery (Joint project with UNO and New Orleans City Park) F-131-R***

Bayou St. John and the City Park Lagoons are located near the downtown area of New Orleans, La. This grant will assess and restore habitat, determine the quantity and quality of sport fish populations and quantify fishing pressure. Modifications in the water supply system will allow estuarine organism inflow into the entire system. Public use should increase as a result of improved fishing. Due to impacts from Hurricane Katrina, project initiation was delayed six months and did not begin until Jan. 2, 2006. This project was continued for an additional three years to improve water flow in Bayou St. John. Through June 30, 2008 approximately 90 percent of the project has been completed.

***The Louisiana Artificial Reef Program***

The Louisiana Artificial Reef Program (LARP) was founded in 1986 through the cooperative efforts of LSUCFI and LDWF. Resultant legislation called for the development of a State Artificial Reef Plan and provided for LARP. Act 100 of the 1986 Legislature established that LDWF would operate the program with logistical support from LSUCFI. LSUCFI and LDWF produced a plan in the fall of 1986 that was accepted by the Louisiana Legislature. The plan outlined the siting, permitting and monitoring requirements of the program.

LARP was established to use obsolete oil and gas platforms to provide habitat for Louisiana's coastal fishes and fishing opportunities for recreational and commercial harvesters. Federal law and international treaty require oil exploration companies to remove these platforms one year after production ceases. LARP has provided an opportunity for oil companies to contribute to maintenance of fisheries habitat. Since its inception, 61 oil and gas related companies have participated in the offshore program and donated the jackets of 190 oil and gas structures. Forty-two obsolete oil and gas structures were accepted into the offshore artificial reef program during the 2008 calendar year. Previously deployed offshore reef material includes 40 armored personnel carriers and one offshore tug.

Three deep-water oil and gas platforms have been accepted into the deep-water reef program. Even though these reefs are in water depths in excess of 400 feet, the structure establishing the reef must maintain sufficient profile in the water column to be accepted into LARP. The deployments of the platforms undergo a non-explosive partial removal process which preserves the established biological community with minimal disturbance, maintains fishing opportunities for residents and saves money on the decommissioning of the platform.

LARP also manages a Special Artificial Reef Sites (SARS) program specifically aimed at establishing artificial reefs under unusual and/or exceptional circumstances, including occurrences such as natural and man-made catastrophes outside LARP's nine artificial reef planning areas. The oil and gas industry in the Gulf of Mexico continues to recover from the devastation of the 2005 hurricane season and is currently faced with recovering from hurricanes Gustav and Ike. Sixty structures were destroyed and another 124 were moderately to extensively damaged by the 2008 storms. Industry has sought alternatives in cleanup activities to reduce the cost of removal and have petitioned LARP to accept structures at the location they were destroyed. LARP attempts to minimize negative impacts and the cost of removing these structures, while maintaining and enhancing fisheries habitat. The evaluation of the proposals from SARS projects related to the 2005 hurricanes has been completed. A moratorium has been placed on future SARS proposals while LARP evaluates the current SARS process.

In addition, the reef program has developed 22 inshore reefs, primarily low profile reefs composed of shell and limestone. LDWF constructed eight reefs, and 14 others were constructed in association with public conservation and private groups. In working with one of these groups LDWF constructed four reefs using reef balls. Reef balls have been deployed successfully in tropical and oceanic environments, but this was the first attempt to deploy in an estuarine setting.

## HABITAT PROTECTION PROGRAMS

Habitat Protection Programs include: SEAMAP; Hydrographic Monitoring; Monitoring Louisiana's Rainfall, Air Temperature and River Discharge; Oil Spills and Hazardous Materials; Coastal Wetlands Protection; and Caernar-

von and Davis Pond Freshwater Diversion Projects.

## Southeast Area Monitoring and Assessment Program (SEAMAP)

SEAMAP is a cooperative state, federal and university program for collecting, managing and disseminating fishery-independent biological and environmental data and information in the southeastern United States. Fishery-independent data are those collected by fisheries scientists, rather than fishermen. SEAMAP collects data on fish stocks that are managed jointly by the states and federal government, and conducts a variety of data collection activities including a Fall Shrimp/Groundfish Survey, Spring Plankton Survey, Reef Fish Survey, Summer Shrimp/Groundfish Survey, Fall Plankton Survey and other plankton and environmental surveys.

LDWF collects samples between Southwest Pass of the Mississippi River and Pointe au Fer, and out to the 120-foot depth contour off the Louisiana coast. Louisiana SEAMAP activities include spring (March-April), summer (July), autumn (October) and winter (December-January) trawl surveys that also collect zooplankton and environmental resource data.

Biological samples are collected using a SEAMAP standard 42-foot trawl to collect juvenile and adult animals. Each trawl station is sampled once during daylight hours and once at night to measure the different animal communities that are present in a daily cycle. Plankton nets are used to sample early life history stages (eggs and larvae) of marine organisms. Environmental data are collected at all stations.

The fall 2007 survey was conducted Oct. 8-11, aboard the chartered vessel *Pelican*. All 12 scheduled daytime and nighttime demersal trawl stations and seven plankton stations were sampled successfully, for a total of 31 samples.

The winter 2007 survey was conducted Dec. 4-7, aboard the chartered vessel *Pelican*. All 12 scheduled daytime and nighttime demersal trawl stations and six plankton stations were sampled successfully for a total of 30 samples.

The spring 2008 survey was conducted April 1-4 aboard the chartered vessel *Pelican*. All 12 scheduled daytime and nighttime demersal trawl stations and seven plankton stations were sampled successfully for a total of 31 samples.

The summer 2008 survey was conducted June 23-26, aboard the chartered vessel *Pelican*. Eight scheduled daytime and nighttime demersal trawl stations and seven plankton stations were sampled successfully for a total of 25 samples.

Data from all sample cruises, including real-time shrimp and red snapper data from the summer cruise, were entered, verified and uploaded to the SEAMAP data management system. SEAMAP data are available by request, as are the various SEAMAP publications, including environmental and biological atlases of the Gulf of Mexico for

each year from 1983 through the present. More information about SEAMAP is available at the GSMFC website: <http://www.gsmfc.org/>.

### Hydrographic Monitoring

LDWF began collecting constant records of salinity, water temperature and tide level in 1958. This program continued in 2007-2008, cooperatively between LDWF and USGS. Data are collected from 15 stations located from Pearl River to Calcasieu Pass; details are shown in **TABLE 20**.

Field data are collected by USGS, and finished data are provided to LDWF. All sites collect data in near real-time (four-hour lag), and the data are transmitted via satellite from the instrument in the field to the USGS office in Baton Rouge and downloaded to LDWF's database via the Internet. Both internal and external data requests are filled from this database. Once processed, the data are used to support fishery management by, for example, determining how much suitable area of brown shrimp nursery grounds are available each year and setting season opening dates.

### Monitoring Louisiana's Rainfall, Air Temperature and River Discharge

LDWF is continuously updating the database with rainfall, air temperature and river discharge readings throughout the state. These readings are used to monitor inputs that affect the elevation of the state's coastal waters. It is also vital in supporting fishery management by, for example, determining conditions available for brown shrimp each year, resulting in the season opening dates. Field data are collected by outside agencies and are provided to LDWF via the Internet. Once processed, both internal and external data requests are filled from the database by LDWF biologists.

The rainfall and air temperature data are collected from nine different divisions, each having multiple stations in various locations statewide. Each of these sites is supervised by NOAA/National Weather Service and the information is compiled and published in monthly and annual reports and received at the National Climatic Data Center. Readings are available in monthly averages for each division, as well as average minimum and maximum air temperature. Monthly preliminary data are sent to LDWF but is not entered until NOAA edits and publishes the final draft for each month and then ultimately for each year. LDWF biologists enter the data from monthly published reports and verifies with annual summaries for any editions.

The river discharge data are collected in real-time and are transmitted to the USACE New Orleans District. LDWF retrieves this information at: <http://www.mvn.usace.army.mil/eng/edhd/wcontrol/wcmain.htm>. The Mississippi and Atchafalaya are the only two river basins that LDWF monitors. The Mississippi River station is located at Tarbert Landing, Miss., and the Atchafalaya River station is located at Simmesport, La. These stations transmit a daily reading. LDWF biologists enter and verify the data for inclusion into the database. The data collected during 2007

LDWF #	USGS #	Station Name	Current Status
105	0738023365	Bayou Rigolets near Slidell	Online
112	07374526	Black Bay near Snake Island, Point-a-la-Hache, LA	Online
117	3007220891501	Mississippi Sound at Grand Pass	Online
315	073802515	Barataria Pass East of Grand Isle	Online
317	07380251	Barataria Bay North of Grand Isle	Online
320	07380335	Little Lake near Cutoff	Online
321	07380340	Tennessee Canal near Cutoff	Online
338	073802512	Hackberry Bay NW of Grand Isle	Online
417	073813498	Caillou Bay SW of Cocodrie	Online
518	07381349	Caillou (Sister) Lake SW of Dulac	Online
622	07387040	Vermilion Bay near Cypremont Pt.	Online
623	07387050	Vermilion Bay at Bayou Fearman	Online
730	08017095	North Calcasieu Lake near Hackberry	Online
731	08017118	Calcasieu River near Cameron	Online
732	08017044	Calcasieu River at the I-10 Bridge	Online

**TABLE 20.** Data collection stations

showed average rainfall amounts and river discharge to be just above our long-term average, and air temperatures to be slightly above our long-term average.

### Oil Spills and Hazardous Materials

LDWF's Oil Spill Task Force continued in fiscal year 2007-2008 to develop and implement plans to protect and restore the state's wildlife, fishery and habitat resources from the adverse effects of oil spills. With other state and federal trustees, LDWF representatives continued to develop a pilot plan for a regional restoration planning program for Louisiana that will provide a means to efficiently restore habitat and other natural resources injured as a result of small spills.

Pre-assessment data collection for Natural Resource Damage Assessments was begun for spills that occurred during 2007-2008. These were:

- August 2007 Dune Energy pipeline rupture near Bateman Island in St. Mary Parish.

LDWF continued damage assessment and restoration planning activities.

- August 2006 Apache pipeline incident in Plaquemines Parish, La. on Pass a Loutre WMA.
- January 2007 Expert Oil and Gas well blowout in Bayou Perot near Lafitte, La.
- January 2007 Forest Oil pipeline incident in Plaquemines Parish, La. on Pass a Loutre WMA.
- January 2007 Harvest Oil pipeline incident in Plaquemines Parish, La.
- May 2007 Mariner pipeline rupture in Plaquemines Parish, La.
- January 2005 Shell pipeline spill in Joseph's Bayou in South Pass.
- April 2005 Exxon/Mobile pipeline rupture in West Champagne Bay.
- June 2005 Amerada Hess tank overflow onto Breton Island.
- July 2005 Exxon/Mobil spill in West Bay Champagne north of Grand Isle.
- August 2005 multiple small spills related to Hurricane Katrina in Southern Louisiana
- September 2005 multiple small spills related to Hurricane Rita in the western portion of the state.
- October 2005 Gold King/Shell had a mystery spill in Garden Island Bay.
- January 2006 Shell pipeline spill in Joseph's Bayou in South Pass.
- June 2006 CITGO waste pit overflow in the Calcasieu Ship Channel.
- September and October 2004 multiple post Hurricane Ivan oil spills into the marsh along Pass-a-Loutre and in the WMA itself.
- Damage assessment on November 2003 Exxon/Mobil pipeline spill on Mendicant Island north of Grand Isle in Barataria Bay.
- Restoration Planning on a March 2003, Exxon/Mobil oil spill in Lake Washington, out of Port Sulphur, La.
- Restoration phase begun for the April 2002 BP/Amoco pipeline spill in Little Lake in the Barataria Basin near Galliano, La.
- Restoration planning continued for the May 2002 Unocal Oil pipeline spill in the East Lake Palourde Field near Morgan City.
- Restoration Planning for the December 2002 Hillcorp pipeline spill at Duck Lake in the Atchafalaya Basin.
- Restoration Planning underway for an April 2001 Williams Petroleum pipeline spill at Mosquito Bay near Pointe au Fer.
- Monitoring of restoration that was put in place for the November 2000 T/V Westchester tanker spill in the Mississippi River. The focus of restoration for this spill was the area on and around Pass-a-Loutre WMA where a delta splay project was constructed to compensate for marsh and other habitat injuries. Improvements were also made to campground facilities on the WMA. Monitoring continues.
- Restoration planning/implementation activities for a June 1997 Apache Corporation pipeline spill in coastal Vermilion Parish continued in 2004.
- Restoration Planning for the September 1998

Equinox well blowout in Lake Grand Ecaille, Plaquemines Parish was delayed by Katrina-related equipment shortage.

LDWF also participated in an interagency project initiated by the Louisiana Oil Spill Coordinator's Office to develop regional plans to restore natural resources injured in oil spills.

LDWF is participating with other state and federal agencies in planning restoration of hazardous materials sites. Two planning activities continue: Bayou Trepagnier in St. Charles Parish and Calcasieu River in Calcasieu Parish.

LDWF also evaluated and responded as needed to approximately 3,000 oil spill notifications which were received from Louisiana State Police. These notifications cover a range of hazardous emissions and chemical spills as well as oil spill related incidents.

### **Seismic Section**

The LDWF Seismic Section was created in 1939 specifically to protect oysters, fish, shrimp and other wildlife from the effects of seismic exploration. Seismic exploration uses energy waves to generate a profile of sub-surface reflective layers that help define potential oil and gas traps. The energy waves can be produced by explosives detonated below the ground (generally 100-150 feet deep), by air guns that emit a powerful burst of air just above the surface, or by large vibrating pads placed on the surface. These projects can occur in sensitive wetlands, water bodies and uplands. Seismic agents monitor geophysical companies to protect Louisiana's fish and wildlife resources by ensuring compliance with LDWF seismic rules and regulations. During fiscal year 2007-2008, the Seismic Section monitored 23 projects throughout the state.

### **Coastal Wetlands**

In fiscal year 2007-2008, the Marine Fisheries Division continued to work with state and federal agencies to develop strategies for slowing the rate of coastal wetlands loss in Louisiana. Following hurricanes Katrina and Rita in 2005, the state of Louisiana embarked on a joint coastal planning process that includes both hurricane protection and coastal wetlands restoration. USACE received funding through a series of supplemental appropriations to provide "100 year level flood protection" in the New Orleans vicinity. USACE put forward 17 individual environmental reports in lieu of Environmental Assessments or Environmental Impact Statements to support this goal. Division staff continuously worked to coordinate and review these hurricane reaches and understand their impacts on estuarine and coastal environments. One of the projects involved construction of gates in the Gulf Intracoastal Waterway, the Mississippi River Gulf Outlet, Bayou Bienvenue and a sector gate at the Seabrook entrance to Lake Pontchartrain. This project combined with discussions of the planned closing of the Mississippi River Gulf Outlet at Bayou La Loutre and the proposed large diversion of fresh water through a siphon near Violet into the Lake Borgne system required considerable effort to understand

and provide relevant comments. In addition, division staff continued to monitor planning and construction efforts on the Morganza to the Gulf hurricane protection levee, Donaldsonville to the Gulf hurricane protection levee, refurbishment of non-federal levees at Grand Isle, planning for the Port of Iberia Channel Deepening Project, the Calcasieu Dredged Material Management Plan, and the Sabine-Neches Waterway plan. Division staff also participated in evaluation of 10 Coastal Wetlands Planning, Protection and Restoration Act projects for Priority lists 17 and 18. Up to four of the 10 projects may be funded annually for engineering and development activities. Staff also participated in planning for and monitoring of the opening of the Bonnet Carre spillway that occurred on April 11, 2008. For the first time, LDWF was able to monitor impacts of the opening to estuarine resources with data from before the opening and after the opening. LDWF had an existing contract with the UNO Nekton Research Laboratory for monitoring hurricane recovery of estuarine resources. In collaboration with UNO and USACE, division staff were able to collect data after the opening that were comparable to data collected before the opening to evaluate the effects of the opening.

#### **Caernarvon and Davis Pond Freshwater Diversion Projects**

Extensive fisheries resource monitoring programs continued for both the Caernarvon and Davis Pond Freshwater Diversion Projects. The Caernarvon Project has been operational for 17 years and LDWF personnel have monitored its effects on the fish, wildlife and vegetation populations in the basin throughout its operation. The Davis Pond Project came on-line in July 2002. Ongoing maintenance designed to address problems with flooding in the ponding area north of Lake Cataouatche continued to limit the amount of freshwater diverted through the Davis Pond structure. More water was diverted through these structures in 2006-2007 as a result of recommendations by the Interagency Advisory Committees for both Davis Pond and Caernarvon. Marine Fisheries personnel continued to monitor the fisheries resources in the Barataria Basin including a comprehensive study of the Davis Pond project effects on recreational fishing throughout the basin. The Marine Fisheries Division provides input into the operation of both structures.

# INLAND FISHERIES

The Inland Fisheries Division manages fish populations through surveys, fish sampling, fisheries regulations, fish stocking and the modification of fisheries habitat. In addition, the division is charged with the control of nuisance aquatic vegetation in public water bodies. This is accomplished through an aggressive aquatic plant control program that utilizes a variety of management options including herbicides, drawdowns and biological controls. The division is also coordinating the state's efforts with respect to invasive species. Act number 185 of the 2004 legislative session created the Louisiana Aquatic Invasive Species Council and Task Force within LDWF. The council and task force are working to implement the "State Management Plan for Aquatic Invasive Species in Louisiana." The goal of the management plan is to prevent and control the introduction of new non-indigenous species into Louisiana, to control the spread and impact of existing invasive species and to eradicate locally established invasive species wherever possible.

## FISHERIES MANAGEMENT

### Lake Management

Fisheries managers estimate relative abundance, size class structure and species composition of fish population and physiochemical characteristics of the water in 90-100 lakes, rivers and streams annually. All lakes are sampled in a similar manner so that data from different waterbodies are comparable.

Electrofishing sampling is conducted in both spring and fall to provide a measure of population indices including abundance, size distribution, age structure and genetic composition. Sampling includes only largemouth bass in the fall; crappie are included in the spring. A forage sample of all species is also collected in the fall. Sampling sites are pre-determined and selected to represent available aquatic habitats within the water body. Sampling protocol is standardized to the extent possible to allow for comparison of data over time.

Gill net samples are taken during winter primarily to determine relative abundance and length frequencies of gizzard shad, striped bass, hybrid striped bass and commercial and rough fish species. Monofilament nets with mesh sizes from 2.5-4 inches (bar mesh) are set at dusk and gathered at sunrise. Each fish taken is identified, weighed and measured. This sampling method provides gear selectivity, species composition and length frequency information.

Nighttime shoreline seine sampling measures reproductive success of the sunfishes including bass and bluegill. Year-class strength, species composition and prey availability are provided by this sampling effort. Sampling is conducted during spring and summer and consists of one quadrant haul at each sample site using a 25x6-foot seine.

Inland Fisheries uses lead nets to measure relative abundance and length-frequencies of crappie and other sunfish. Species composition, growth rate and length weight relationships are determined. Sampling is conducted at pre-determined sites for a minimum of 48 hours each with two nets at each station.

Water quality samples are taken at all sampling stations. Water temperature, pH, dissolved oxygen concentration, conductivity, oxidation/reduction potential and water depth are measured.

Creel samples were conducted on five water bodies in 2008. This sampling method puts the fisheries manager in direct contact with the fishermen. Information collected includes species sought and species caught, distance traveled, time fished, number caught and released and a measurement of all fish harvested.

The Inland Fisheries Division also monitors other fish species, including paddlefish and sturgeon. The division continues to collect data on relative abundance, habitat requirements, movements and population estimates. Tagging, age and growth and population characteristics of pallid and shovelnose sturgeon will continue to be collected in 2009. The division has tagged and handled over 500 sturgeons including 32 endangered pallid sturgeons. Approximately 10 satellite receiver stations have been established along reaches of the Mississippi River to monitor movement of pallid sturgeon.

Giving technical advice to owners of ponds and small lakes is also part of the responsibility of Inland Fisheries. During fiscal year 2007-2008, division biologists made site visits, assisting residents of the state on problems ranging from construction and stocking requirements, to harvest and disease identification. The biologists also answered over 2,500 phone inquiries about various pond-related problems.

The Louisiana Cooperative Fish Disease project, which the division has with the LSU Aquatic Animal Diagnostic Lab within the School of Veterinary Medicine, provides support to private pond owners. In fiscal year 2007-2008, 260 cases were submitted as part of this project.

The division is also responsible for conducting investigations into fish kills in freshwater. Area impact and losses are recorded for each kill. Naturally-occurring dissolved oxygen depletion, as well as saltwater intrusion, was indicated as the cause of most kills. Continued investigations into the Largemouth Bass Virus problem were conducted. LDWF personnel assisted in administering a grant to LSU to develop non-lethal methods for detection of this disease.

### Aquatic Plant Research and Control Program

During fiscal year 2007-2008, the Aquatic Plant Research and Control Program (APRCP) provided substantial benefits to the citizens of Louisiana. Responsibilities included monitoring water bodies for non-native and invasive aquatic vegetation, providing technical assistance and continually investigating more effective and environmentally safe methods of controlling these nuisance plants. Aggressive treatment of affected waters continued in an effort to restore and improve the aquatic habitat and the natural desirable balance of plants and fish. Control of nuisance plant species is also necessary to provide boating access to many public waterways.

To prevent habitat degradation from exotic aquatic vegetation and to maintain fisherman and boater usage throughout the state, aquatic herbicides are used to treat nearly 1/3 of the state's fishable waters annually. LDWF crews throughout the state treated 169 waterbodies during fiscal year 2007-2008.

A total of 58,765 acres were treated throughout the state. Of that total, 251 acres were sprayed below the salt water line.

Biologists continued to provide advice and technical assistance to private and municipal pond owners concerning aquatic vegetation management problems. This popular extension program also provided aquatic plant identification assistance for the public on request.

Research projects of the APRCP included evaluation of new herbicides to determine their effectiveness for use in aquatic weed control.

LDWF utilizes both conservation and federal funds to control primarily water hyacinth (*Eichhornia crassipes*). However, in the course of treating water hyacinth with the herbicides 2, 4-D and glyphosate, emergent plants such as alligatorweed (*Alternanthera philoxeroides*), primrose (*Ludwigia spp.*), American lotus (*Nelumbo lutea*) and several others of minor importance were also sprayed. Other troublesome submersed and floating plants not susceptible to control with 2, 4-D and glyphosate, such as hydrilla (*Hydrilla verticillata*) and two species of salvinia (*Salvinia minima* and *S. molesta*), require more expensive herbicides. State funds in the Aquatic Plant Control Fund (APCF) were used to purchase herbicides to address infestations of these plants. Statewide, giant salvinia is now present in many public waterbodies that are heavily timbered and difficult to access. Spray crews had to spend a great deal of time searching for and treating these troublesome infestations.

Fifteen percent of the APCF was used to fund research into aquatic plant control by the LSU AgCenter. LSU continued its research into biological control of salvinia using the salvinia weevil (*Cyrtobagous salviniae*). Research efforts are currently focused on rearing a sufficient number of weevils to release on infestations of salvinia. Salvinia weevils were released on five sites in four waterbodies for giant salvinia and nine sites in seven waterbodies for common salvinia.



Biological control of giant salvinia using the salvinia weevil is recognized as the leading, and most often used, control strategy in all areas of the world due to its highly effective nature. Over one million salvinia weevils have been mass produced by the USDA in the last two years and released into giant salvinia-infested waterways in Texas and Louisiana.

In addition to using herbicides, certain nuisance aquatic plants can be controlled by manipulating water levels (drawdown). Nine lakes were drawn down this year for aquatic plant control.

### Log and Tree Removal

As part of the aquatic habitat management program, crews throughout the state cut and remove logs and trees that have fallen into waterways and obstruct navigation. There were a total of 56 water-bodies that were cleared of logs and trees throughout the year, taking 404.5 man-hours of work.

### Fish Stocking

The goals and objectives of the Inland Fisheries Division include providing the public with a quality fishing experience and managing for big bass. In part, the management for big bass is reliant upon the stocking or incorporating of the Florida largemouth bass gene into our native black bass environment. In fiscal year 2007-2008, LDWF Inland Fish Hatcheries, in assistance with other partnerships such as USFWS, Cross Lake Fish Hatchery, Rockefeller Refuge and other local and private associations, addressed stocking needs for 82 diversified water bodies throughout the state of Louisiana.

#### Summary of Fish Species Stocked Fiscal Year 2007-2008

Florida Largemouth Bass:	4,556,609
Bluegill:	1,225,866
Striped Bass:	68,223
Channel Catfish:	589,735
Paddlefish:	289,085
Threadfin Shad	1,500
Triploid Grass Carp:	14,944
<b>Total</b>	<b>6,745,962</b>

The following is an alphabetical listing of the water bodies stocked in fiscal year 2007-2008: Amite River Complex; Anacoco Lake; Bayou D'Arbonne; Bayou Lacombe; Bayou Liberty; Bayou Macon Cutoff #1, #2, #3; Bayou Plaquemine; Bayou St. John; Black Bayou (Bossier); Black Lake (Natch. Par.); Black River Lake; Blind River Complex; Buhlow Lake; Caddo Lake; Caernarvon; Calcasieu River; Cameron Prairie NWR; Camp Edgewood; Chatham Lake; Cheniere Brake Lake; Chicot Lake; City Park Lake (Baton Rouge and New Orleans); Claiborne Lake; Cocodrie Lake (Concordia Par.); Cocodrie Lake (Evangeline Par.); Comite River; Cotile Lake; Crooked Creek Lake; Cross Lake; Cypress Bayou Lake; Dauterive Lake Area; False River; Grambling State Pond; Grassy Lake; Henderson Lake; Holbrook Park; Horseshoe Lake (Concordia Par.); I-55 Canal System; Indian Creek Lake; James Bayou; Kepler Lake; Kincaid Lake; Kiroli Park Lake; Lacassine Pool; Lac Des Allemands; Lafreniere

Park; Lake Fausse Point; Lake Hatch; Lake Louis; Lake Theirot; Lake Verret; Lower Sunk Lake; Martin Lake; Mermentau River; Middle River Complex; Mill Creek Lake; Miller's Lake; Nantachie Lake; Old River Rac-couri; Poverty Point Lake; Raymond Cove Area; Reserve Canal; Rockefeller Refuge; Sabine River; Saline Lake; Spanish Lake; Spring Bayou; St. Charles Parish Prison; Tangipahoa River Complex; Tchefuncte River; Tew Lake; Tickfaw River Complex; Toledo Bend; Turkey Creek Lake; University Lake (E. Baton Rouge Par.); Vernon Lake; Waddill Recreation Area; and Wallace Lake.

## PUBLIC BOATING AND FISHING ACCESS

In a cooperative effort, LDWF assists local government entities requesting financial assistance in the development and construction of boating and fishing access facilities. To accomplish this, LDWF obligates a portion of its federal Sport Fish Restoration funds to match up to 75 percent of the total cost of these projects. This program funds both freshwater and saltwater projects which may include construction of boat ramps, parking areas, docks, bulk heading and fishing piers. A total of 76 projects are completed to date, and another 19 are in various stages of either planning or construction. Issues related to past hurricanes continue to adversely affect progress on boat ramp construction. Some of these issues that local and state government sponsors are dealing with include priority spending and higher construction costs.

### Public Access Facilities for Boating and Fishing Under Construction or in the Planning Stage

- Reserve Boat Launch, Phase II
- Reserve Boat Launch, Phase III
- Golden Meadow Public Boat Launch
- Sherburne WMA Boat Launch
- Burns Point Park Boat Launch
- Jessie Fontenot Boat Launch, Phase III
- South Houma Fire Station Boat Launch
- Texas Gulf Road Boat Launch
- North Pass
- Bayou Macon
- Tensas Basin
- Baker's Cut-Off
- Gateway Landing, Washington
- Leonville Boat Launch
- Venice Marina
- Old Ferry Landing, Tier I
- Slidell Marina, Tier I
- Empire Marina
- Lake Claiborne Boat Lane Marking

### Projects Completed During Fiscal Year 2007/2008

Calcasieu, Industrial Canal Fishing Pier

## **2008 PERMITS**

Inland Fisheries Division issues a variety of permits to provide individuals a legal method to participate in a specific activity. A list of these permits, a short explanation for each, and the number issued last year appear below.

### **Freshwater Prawn Permit**

Issued to allow individuals to possess, do research on or culture freshwater shrimp/prawns.

Issued: 0

### **Freshwater Scientific Collecting Permit**

Used to take fish for scientific research or educational purposes, propagation or distribution.

Issued: 60 permits, to collectors from 12 different states.

### **Triploid Grass Carp Permit**

Used to allow individuals to possess triploid grass carp for aquatic vegetation control in private ponds and lakes.

Issued: 342 permits.

### **Triploid Grass Carp Sellers Permit**

Used to allow individuals to import, transport, possess and sell triploid grass carp to the public.

Issued: 8 permits issued to fish hatcheries from 6 different states.

### **Tilapia Permit**

Used to allow individuals to possess for resale, do research on or culture tilapia.

Issued: 12

### **Experimental Freshwater Minnow Dipnet**

Used to allow individuals to commercially fish for minnows using a specific dip net.

Issued: 0

### **Gamefish Fingerling Permit**

Used to allow individuals to transport, possess and sell game fish fingerlings.

Issued: 9 permits issued to individuals from 5 different states.

### **Mussel Harvester's Permit**

Used to allow individuals to commercially harvest freshwater mussels.

Issued: 0

### **Mussel Buyer's Permit**

Used to allow individuals to buy commercially harvested mussels from mussel harvesters.

Issued: 0

### **Scuba Spearfishing Permit**

Used to allow individuals to spearfish in Toledo Bend Reservoir June through September.

Issued: 7